



Shenzhen Huaxia Testing Technology Co., Ltd.

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640

Fax: +86-755-26648637

Website: www.cqa-cert.com

Report Template Version: V05

Report Template Revision Date: 2021-11-03

TEST REPORT

Report No.: CQASZ20250601276E-02
Applicant: Ultimea Technology (Shenzhen) Limited
Address of Applicant: 20th Floor, Building 4, Tianan Cloud Park, Bantian St., Longgang District, Shenzhen, China
Equipment Under Test (EUT):
Product: Projector
Model No.: U0840
Test Model No.: U0840
Brand Name: ULTIMEA
FCC ID: 2A900-U0840P
Standards: 47 CFR Part 15, Subpart C
KDB558074 D01 15.247 Meas Guidance v05r02
ANSI C63.10:2020
Date of Receipt: 2025-06-06
Date of Test: 2025-06-06 to 2025-08-26
Date of Issue: 2025-09-16
Test Result : **PASS***

*In the configuration tested, the EUT complied with the standards specified above

Tested By: Lewis Zhou
(Lewis Zhou)

Reviewed By: Timo Lei
(Timo Lei)

Approved By: Jack Ai
(Jack Ai)



The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20250601276E-02	Rev.01	Initial report	2025-09-16

2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15.203	N/A	PASS
AC Power Line Conducted Emission	47 CFR Part 15.207	ANSI C63.10-2020	PASS
Conducted Peak & Average Output Power	47 CFR Part 15.247	ANSI C63.10-2020	PASS
6dB Occupied Bandwidth	47 CFR Part 15.247	ANSI C63.10-2020	PASS
Power Spectral Density	47 CFR Part 15.247	ANSI C63.10-2020	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15.247	ANSI C63.10-2020	PASS
RF Conducted Spurious Emissions	47 CFR Part 15.247	ANSI C63.10-2020	PASS
Radiated Spurious Emissions	47 CFR Part 15.209	ANSI C63.10-2020	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15.205/15.209	ANSI C63.10-2020	PASS

Remark:

The tested sample(s) and the sample information are provided by the client.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

CH: In this whole report CH means channel.

Volt: In this whole report Volt means Voltage.

Temp: In this whole report Temp means Temperature.

Humid: In this whole report Humid means humidity.

Press: In this whole report Press means Pressure.

N/A: In this whole report not application

3 Contents

	Page
1 VERSION	2
2 TEST SUMMARY	3
3 CONTENTS	4
.....	5
4 GENERAL INFORMATION	6
4.1 CLIENT INFORMATION	6
4.2 GENERAL DESCRIPTION OF EUT	6
4.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD	6
4.4 TEST ENVIRONMENT AND MODE	9
4.5 DESCRIPTION OF SUPPORT UNITS	14
4.6 TEST LOCATION	14
4.7 TEST FACILITY	14
4.8 TEST CONFIGURATION	14
4.9 STATEMENT OF THE MEASUREMENT UNCERTAINTY	15
4.10 DEVIATION FROM STANDARDS	15
4.11 ABNORMALITIES FROM STANDARD CONDITIONS	15
4.12 OTHER INFORMATION REQUESTED BY THE CUSTOMER	15
4.13 EQUIPMENT LIST	16
5 TEST RESULTS AND MEASUREMENT DATA	17
5.1 ANTENNA REQUIREMENT	17
5.2 CONDUCTED EMISSIONS	18
5.3 CONDUCTED PEAK & AVERAGE OUTPUT POWER	24
Test Result	25
Note: Duty cycle correction factor details please see section 4.4.	25
When Duty cycle >98%, D.C.F is not required.	25
Test Graphs	26
5.4 99% OCCUPIED BANDWIDTH	34
Test Result	35
Test Graphs	36
5.5 6dB OCCUPIED BANDWIDTH	44
Test Result	45
Test Graphs	46
5.6 POWER SPECTRAL DENSITY	54
Test Result	55
Test Graphs	56
5.7 BAND-EDGE FOR RF CONDUCTED EMISSIONS	64
Test Result	65
5.7.1 Test Graphs	66
5.8 RF CONDUCTED SPURIOUS EMISSIONS	71
Test Result	72
Test Graphs	74
5.9 RADIATED SPURIOUS EMISSIONS	96
5.9.1 Radiated emission below 1GHz	99
5.9.2 Transmitter emission above 1GHz	103
5.10 RESTRICTED BANDS AROUND FUNDAMENTAL FREQUENCY	115
6 PHOTOGRAPHS - EUT TEST SETUP	123
6.1 RADIATED SPURIOUS EMISSION	123

6.2 CONDUCTED EMISSION	124
6.3 RF CONDUCTED MEASUREMENT	125
7 PHOTOGRAPHS - EUT CONSTRUCTIONAL DETAILS	126

4 General Information

4.1 Client Information

Applicant:	Ultimea Technology (Shenzhen) Limited
Address of Applicant:	20th Floor, Building 4, Tianan Cloud Park, Bantian St., Longgang District, Shenzhen, China
Manufacturer:	Ultimea Technology (Shenzhen) Limited
Address of Manufacturer:	20th Floor, Building 4, Tianan Cloud Park, Bantian St., Longgang District, Shenzhen, China
Factory:	SHENZHEN TOUMEI TECHNOLOGY CO., LTD
Address of Factory:	Room 502, Building A, Jinke Industrial Park, No.310, Wuhe Avenue, Luhuhu Community, Guanhu Street, Longhua District, Shenzhen, China

4.2 General Description of EUT

Product Name:	Projector
Model No.:	U0840
Test Model No.:	U0840
Trade Mark:	ULTIMEA
Software Version:	V1.0
Hardware Version:	B(23365)
Power Supply:	Adapter: Model No.:GQ120-1900632-E1 Input:100-240V~50/60Hz 2.0A Max Output:19.0V 6.32A 120.08W Adapter: Model No.:MSS-Z6320WR190-120C0-E Input:100-240V~50/60Hz 2.0A Max Output:19.0V 6.32A 120W
EUT Supports Radios application:	2.4GHz: Wi-Fi: 802.11b/g/n(HT20)/ax(HE20): 2412MHz~2462MHz; 802.11n(HT40)/ax(HE40): 2422MHz~2452MHz
Simultaneous Transmission	☐ Simultaneous TX is supported and evaluated in this report. ☒ Simultaneous TX is not supported.

4.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11b/g/n(HT20)/ax(HE20): 2412MHz to 2462MHz IEEE 802.11n(HT40)/ax(HE40): 2422MHz to 2452MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20/ax HE20: 11 Channels IEEE 802.11n HT40/ax HE40: 7 Channels
Channel Separation:	5MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n : OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11ax :OFDMA(1024QAM, 256QAM, 64QAM, 16QAM, QPSK,

	BPSK)
Transfer Rate:	802.11b: 1M/2M/5.5M/11M bps 802.11g: 6M/9M/12M/18M/24M/36M/48M/54M bps 802.11n: 7.2M/14.4M/21.7M/28.9M/43.3M/57.8M/65M/72.2M bps 802.11ax: 8.6M/17.2M/25.8M/34.4M/51.6M/68.8M/77.4M/86M/103.2M/114.7M/129M/ 143.4Mbps
Product Type:	☒ Mobile ☐ Portable ☐ Fix Location
Test Software of EUT:	SecureCRT
Antenna Type:	FPC antenna
Antenna Gain:	5.16dBi

Operation Frequency each of channel(802.11b/g/n HT20/ax HE20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		
Operation Frequency each of channel(802.11n HT40/ax HE40)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
3	2422MHz	6	2437MHz	9	2452MHz		
4	2427MHz	7	2442MHz				
5	2432MHz	8	2447MHz				

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

For 802.11b/g/n (HT20)/ax (HE20):

Channel	Frequency
The Lowest channel	2412MHz
The Middle channel	2437MHz
The Highest channel	2462MHz

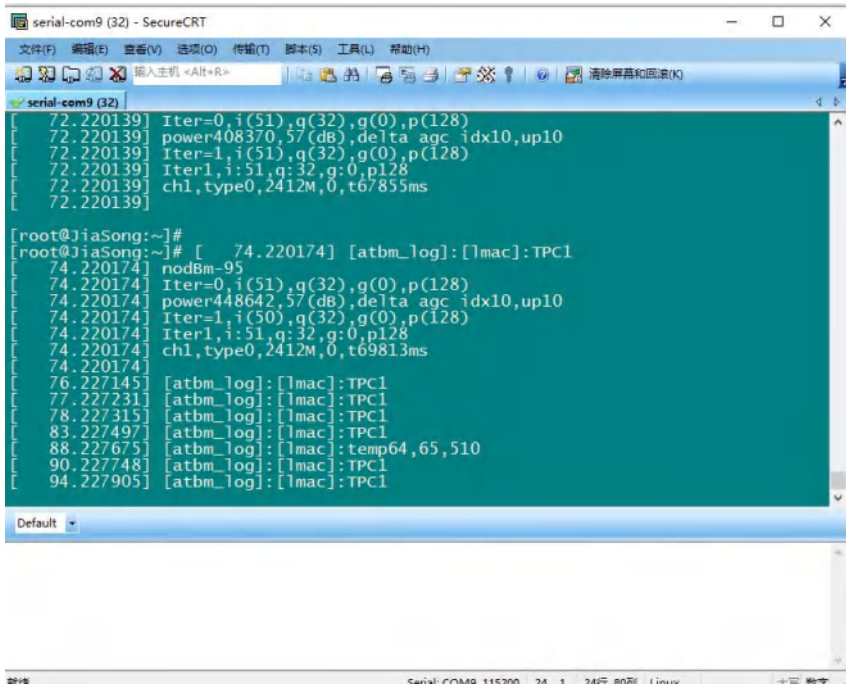
For 802.11n (HT40)/ax (HE40):

Channel	Frequency
The Lowest channel	2422MHz
The Middle channel	2437MHz
The Highest channel	2452MHz

Note:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.4 Test Environment and Mode

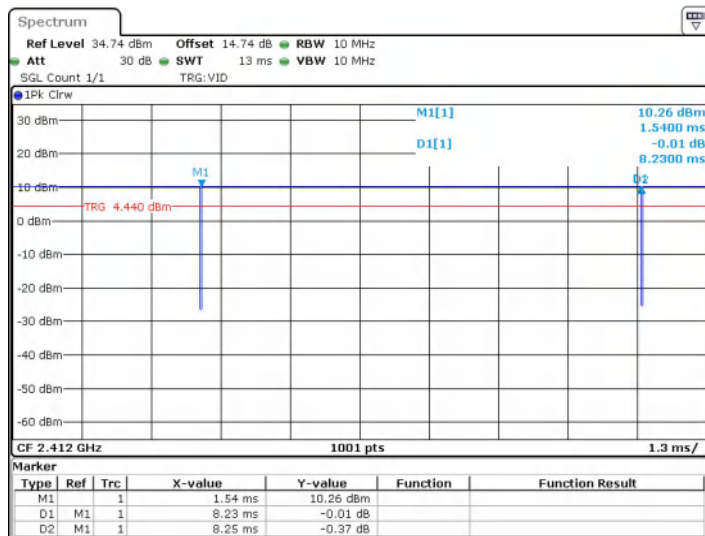
Operating Environment:	
Radiated Emissions:	
Temperature:	25.3 °C
Humidity:	55 % RH
Atmospheric Pressure:	1009 mbar
Conducted Emissions:	
Temperature:	25.6 °C
Humidity:	60 % RH
Atmospheric Pressure:	1009 mbar
Radio conducted item test (RF Conducted test room):	
Temperature:	25.5 °C
Humidity:	52 % RH
Atmospheric Pressure:	1009 mbar
Test mode:	
Transmitting mode:	EUT is set in RF test mode in all supported modulation types, bandwidth and data rate, etc.
EUT Power level:	Class0
Run Software:	
	

Operated Mode for Worst Duty Cycle:				
Test Mode	On time [Ton] (ms)	Period [Ttotal] ms)	Duty Cycle(%)	Average correction factor(dB)
IEEE802.11b	8.23	8.25	99.76	0.01
IEEE802.11g	1.37	1.40	97.86	0.09
IEEE802.11n (HT20)	1.28	1.32	96.97	0.13
IEEE802.11n (HT40)	0.63	0.67	94.03	0.27
IEEE802.11ax (HE20)	1.00	1.04	96.15	0.17
IEEE802.11ax (HE40)	0.53	0.56	94.64	0.24

Remark:

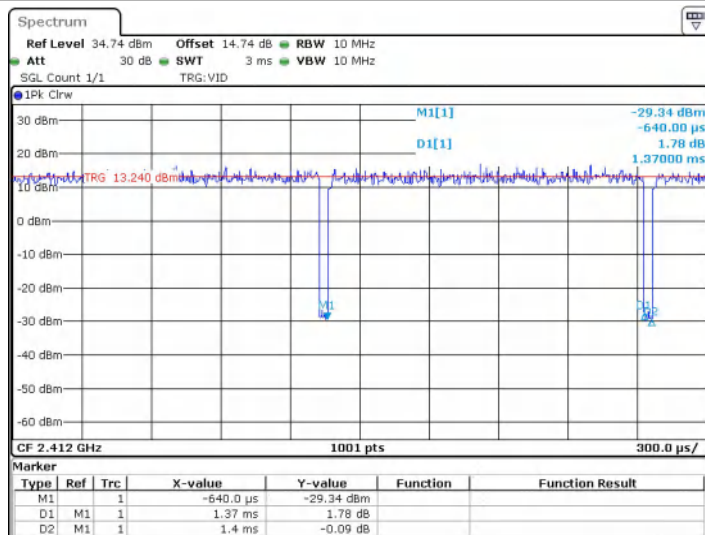
- 1) Duty cycle= On Time/ Period;
- 2) Duty Cycle factor = $10 * \log(1/ \text{Duty cycle})$;

Test Graph_IEEE802.11b Duty Cycle:



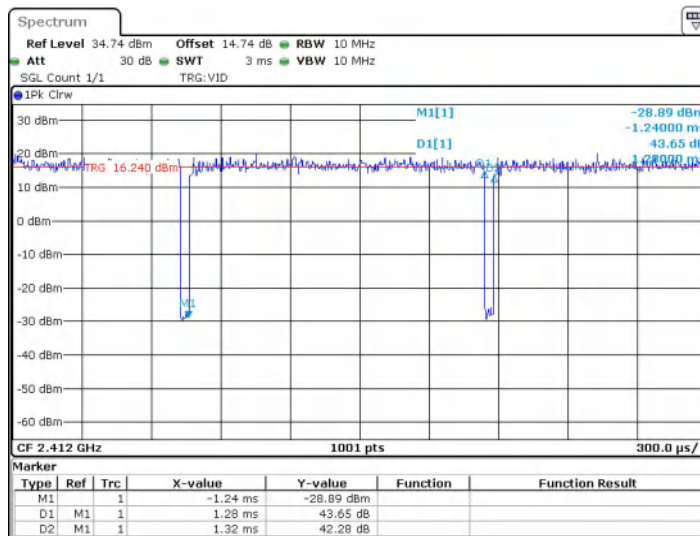
Date: 2 JUL 2025 13:12:17

Test Graph_IEEE802.11g Duty Cycle:



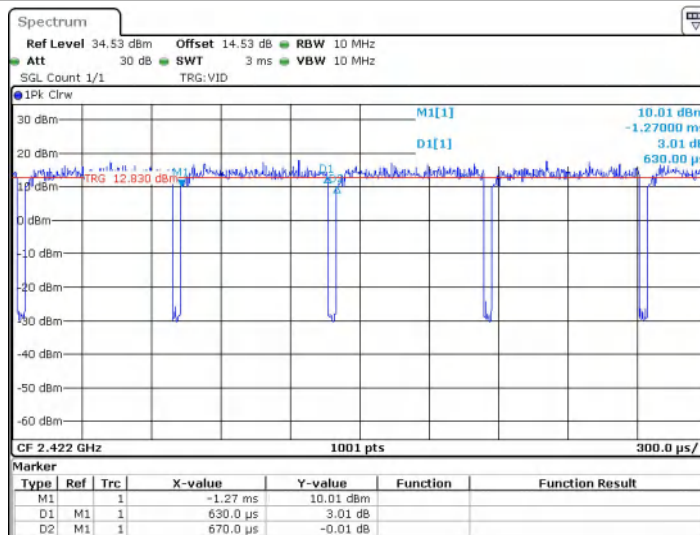
Date: 2 JUL 2025 15:07:55

Test Graph_IEEE802.11 n (HT20) Duty Cycle:



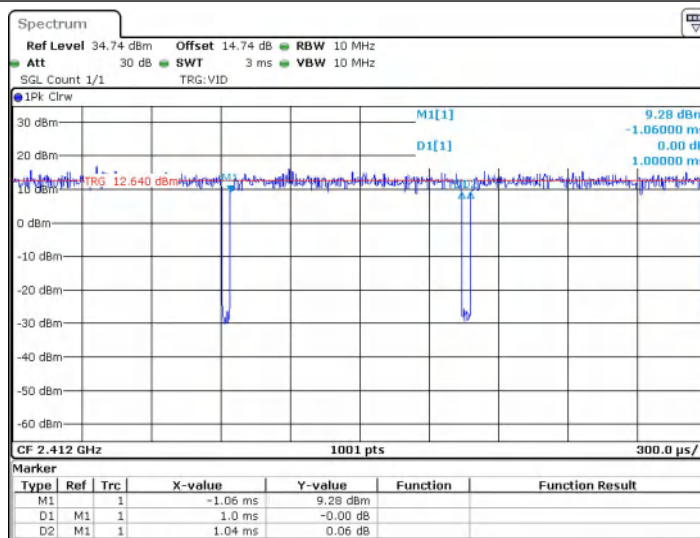
Date: 2 JUL 2025 15:12:23

Test Graph_IEEE802.11 n (HT40) Duty Cycle:



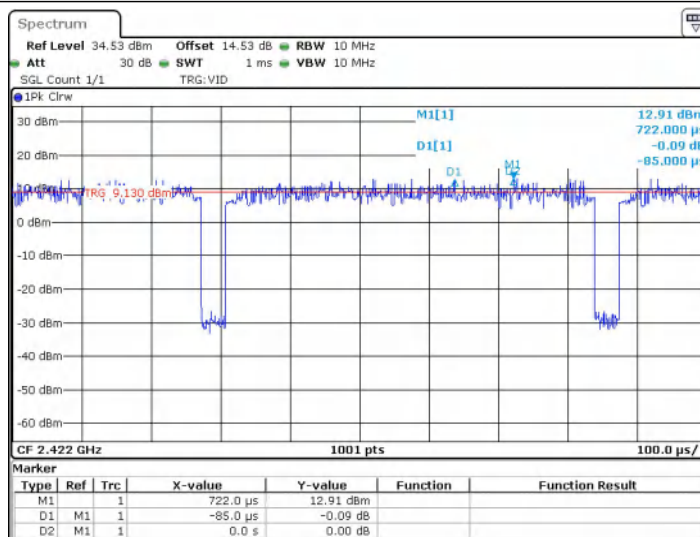
Date: 2 JUL 2025 15:18:31

Test Graph_IEEE802.11 ax (HE20) Duty Cycle:



Date: 2 JUL 2025 15:23:41

Test Graph_IEEE802.11 ax (HE40) Duty Cycle:



Date: 2 JUL 2025 15:38:34

4.5 Description of Support Units

The EUT has been tested with associated equipment below.

1) Support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
/	/	/	/	/

2) Cable

Cable No.	Description	Manufacturer	Cable Type/Length	Supplied by
/	/	/	/	/

4.6 Test Location

All tests were performed at:

Shenzhen Huaxia Testing Technology Co., Ltd.

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua New District, Shenzhen, Guangdong, China

4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

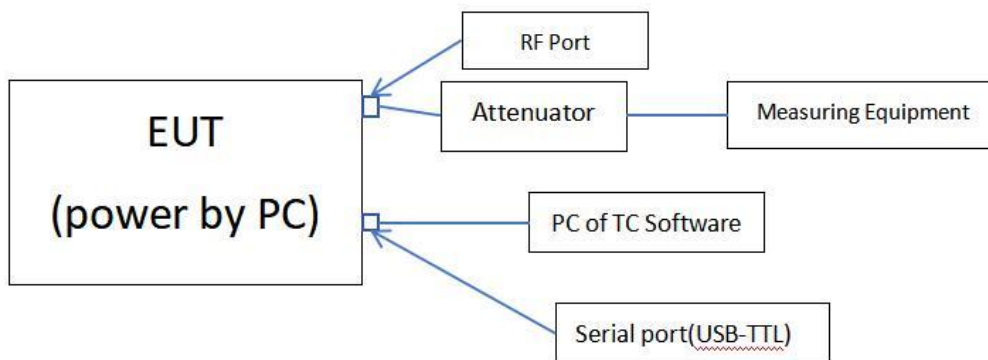
• **A2LA (Certificate No. 4742.01)**

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

• **FCC Registration No.: 522263**

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.:522263

4.8 Test configuration



4.9 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate.

The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities.

The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the **Shenzhen Huaxia Testing Technology Co., Ltd.** quality system acc. to DIN EN ISO/IEC 17025.

Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CQA laboratory is reported:

No.	Item	Uncertainty	Notes
1	Radiated Emission (Below 1GHz)	5.12dB	(1)
2	Radiated Emission (Above 1GHz)	4.60dB	(1)
3	Conducted Disturbance (0.15~30MHz)	3.34dB	(1)
4	Radio Frequency	3×10^{-8}	(1)
5	Duty cycle	0.6 %.	(1)
6	Occupied Bandwidth	1.1%	(1)
7	RF conducted power	0.86dB	(1)
8	RF power density	0.74	(1)
9	Conducted Spurious emissions	0.86dB	(1)
10	Temperature test	0.8℃	(1)
11	Humidity test	2.0%	(1)
12	Supply voltages	0.5 %.	(1)
13	Frequency Error	5.5 Hz	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

4.10 Deviation from Standards

None.

4.11 Abnormalities from Standard Conditions

None.

4.12 Other Information Requested by the Customer

None.

4.13 Equipment List

Test Equipment	Manufacturer	Model No.	Instrument No.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR7	CQA-005	2024/9/2	2025/9/1
Spectrum analyzer	R&S	FSU26	CQA-038	2024/9/2	2025/9/1
Spectrum analyzer	R&S	FSU40	CQA-075	2024/9/2	2025/9/1
Preamplifier	MITEQ	AFS4-00010300-18-10P-4	CQA-035	2024/9/2	2025/9/1
Preamplifier	MITEQ	AMF-6D-02001800-29-20P	CQA-036	2024/9/2	2025/9/1
Preamplifier	EMCI	EMC184055SE	CQA-089	2024/9/2	2025/9/1
Loop antenna	Schwarzbeck	FMZB1516	CQA-060	2023/9/8	2026/9/7
Bilog Antenna	R&S	HL562	CQA-011	2023/11/01	2026/10/31
Horn Antenna	R&S	HF906	CQA-012	2023/11/01	2026/10/31
Horn Antenna	Schwarzbeck	BBHA 9170	CQA-088	2023/9/7	2026/9/6
Coaxial Cable (Above 1GHz)	CQA	N/A	C007	2024/9/2	2025/9/1
Coaxial Cable (Below 1GHz)	CQA	N/A	C013	2024/9/2	2025/9/1
Antenna Connector	CQA	RFC-01	CQA-080	2024/9/2	2025/9/1
RF cable(9KHz~40GHz)	CQA	RF-01	CQA-079	2024/9/2	2025/9/1
Power meter	R&S	NRVD	CQA-029	2024/9/2	2025/9/1
Power divider	MIDWEST	PWD-2533-02-SMA-79	CQA-067	2024/9/2	2025/9/1
EMI Test Receiver	R&S	ESR7	CQA-005	2024/9/2	2025/9/1
LISN	R&S	ENV216	CQA-003	2024/9/2	2025/9/1
Coaxial cable	CQA	N/A	CQA-C009	2024/9/2	2025/9/1
DC power	KEYSIGHT	E3631A	CQA-028	2024/9/2	2025/9/1

Test software:

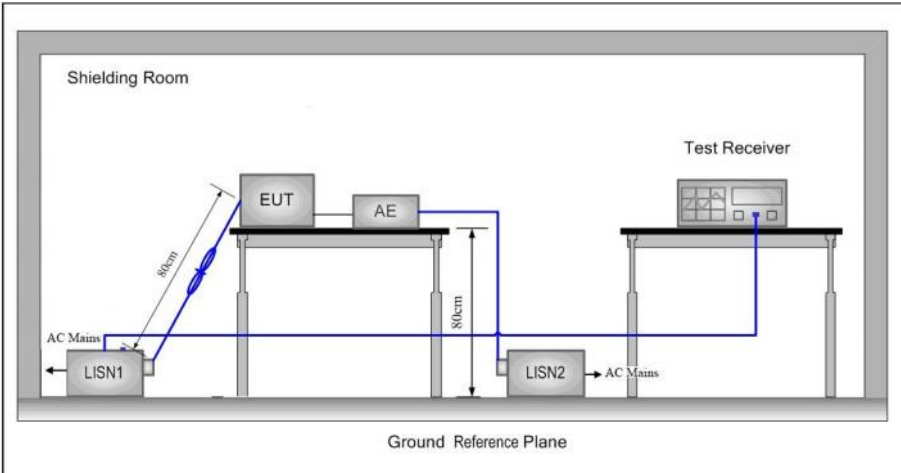
	Manufacturer	Software brand	Software version
Radiated Emissions test software	Tonscend	JS1120-3	Version:8
Conducted Emissions test software	Audix	e3	Version:9
RF Conducted test software	Audix	e3	V3.5.39

5 Test results and Measurement Data

5.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
EUT Antenna:	
The antenna is FPC antenna. The connection/connection type between the antenna to the EUT's antenna port is: unique coupling. This is either permanently attachment or a unique coupling that satisfies the requirement.	

5.2 Conducted Emissions

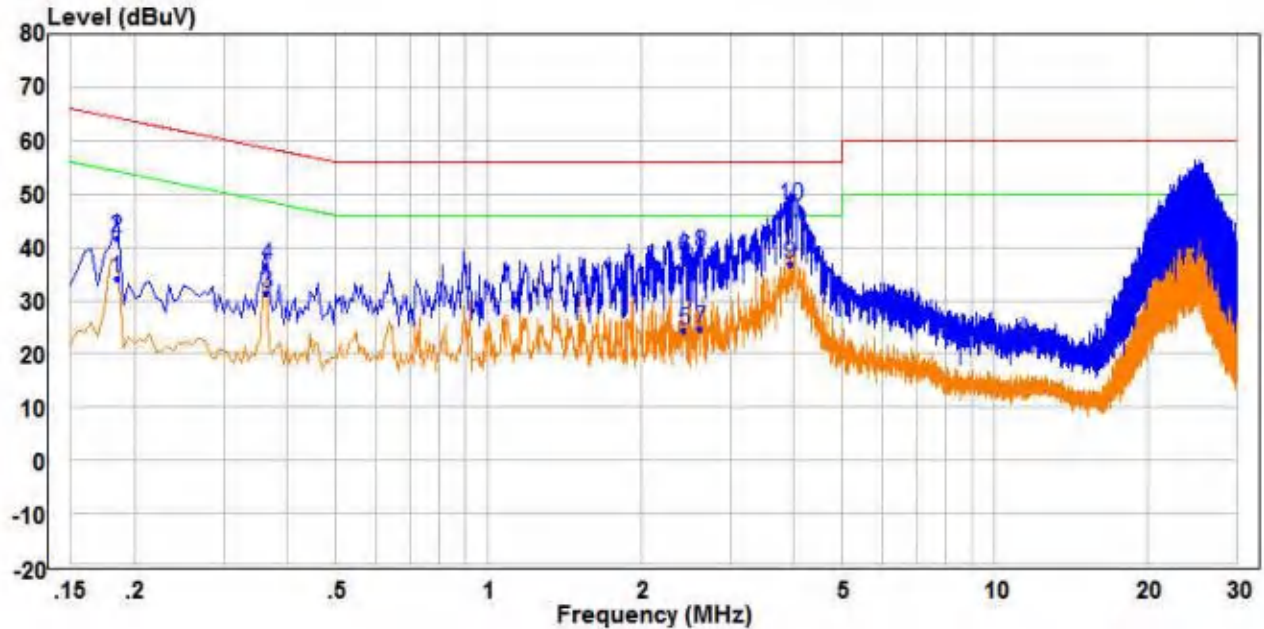
Test Requirement:	47 CFR Part 15C Section 15.207		
Test Method:	ANSI C63.10: 2020		
Test Frequency Range:	150kHz to 30MHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	* Decreases with the logarithm of the frequency.		
Test Procedure:	1) The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2020 on conducted measurement.		
Test Setup:			

Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate of 802.11b at middle channel is the worst case. Only the worst case is recorded in the report.
Test Voltage:	AC120V/60Hz
Test Results:	Pass

MSS-Z6320WR190-120C0-E

Measurement Data

Live line:

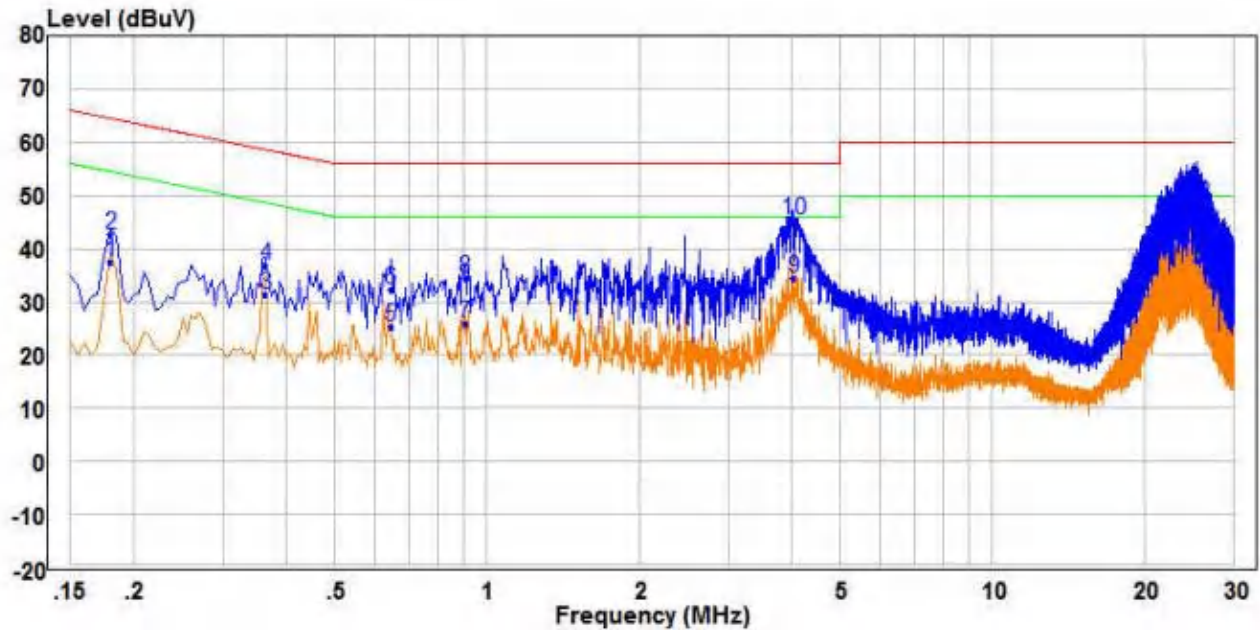


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.185	24.59	9.64	34.23	54.26	-20.03	Average	Line
2	0.185	32.01	9.64	41.65	64.26	-22.61	QP	Line
3	0.365	21.76	9.57	31.33	48.61	-17.28	Average	Line
4	0.365	26.83	9.57	36.40	58.61	-22.21	QP	Line
5	2.430	13.19	11.23	24.42	46.00	-21.58	Average	Line
6	2.430	26.82	11.23	38.05	56.00	-17.95	QP	Line
7	2.620	13.56	11.07	24.63	46.00	-21.37	Average	Line
8	2.620	27.95	11.07	39.02	56.00	-16.98	QP	Line
9 AV	3.945	26.53	10.22	36.75	46.00	-9.25	Average	Line
10 PP	3.945	37.67	10.22	47.89	56.00	-8.11	QP	Line
11	24.775	28.71	10.04	38.75	50.00	-11.25	Average	Line
12	24.775	39.44	10.04	49.48	60.00	-10.52	QP	Line

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral line:



	Freq	Read		Limit	Over		
	MHz	Level	Factor	Line	Limit	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.180	27.89	9.64	37.53	54.49	-16.96	Average
2	0.180	32.98	9.64	42.62	64.49	-21.87	QP
3	0.365	21.79	9.56	31.35	48.61	-17.26	Average
4	0.365	27.22	9.56	36.78	58.61	-21.83	QP
5	0.645	15.50	9.85	25.35	46.00	-20.65	Average
6	0.645	22.34	9.85	32.19	56.00	-23.81	QP
7	0.905	16.20	9.76	25.96	46.00	-20.04	Average
8	0.905	24.69	9.76	34.45	56.00	-21.55	QP
9 AV	4.040	24.76	9.79	34.55	46.00	-11.45	Average
10 PP	4.040	35.68	9.79	45.47	56.00	-10.53	QP
11	25.395	27.84	10.05	37.89	50.00	-12.11	Average
12	25.395	38.41	10.05	48.46	60.00	-11.54	QP

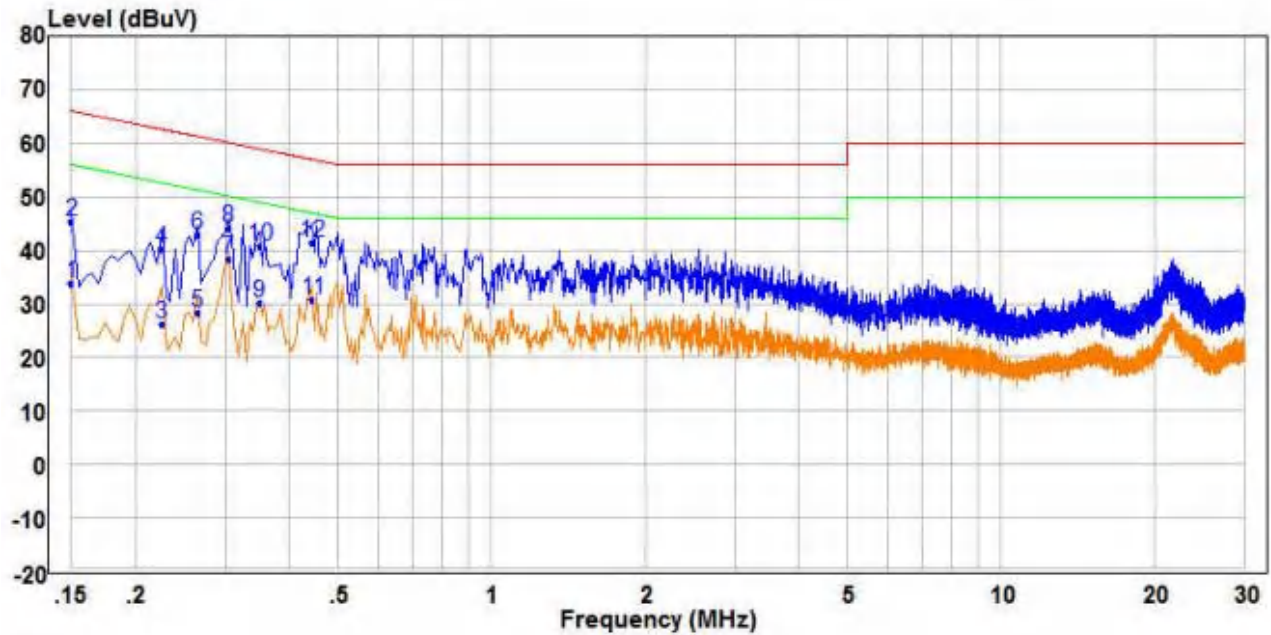
Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

GQ120-1900632-E1

Measurement Data

Live line:

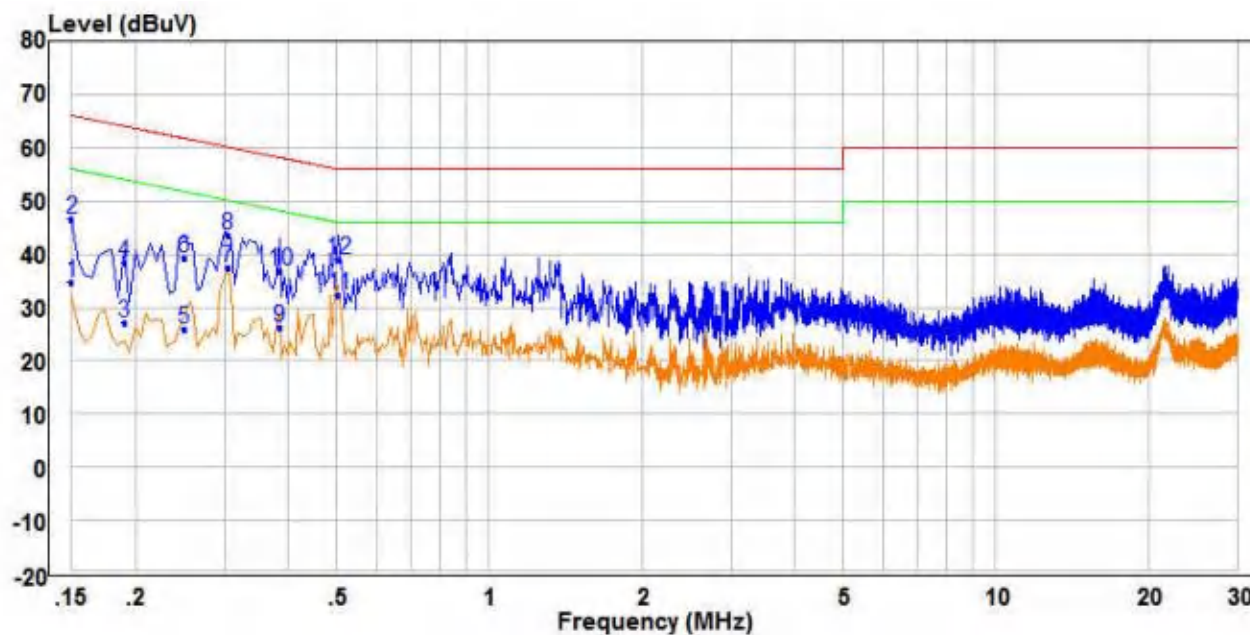


	Freq	Read		Limit	Over		
	MHz	Level	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	Pol/Phase
1	0.150	24.12	9.70	33.82	56.00	-22.18	Average
2	0.150	35.70	9.70	45.40	66.00	-20.60	QP
3	0.225	16.58	9.58	26.16	52.63	-26.47	Average
4	0.225	30.72	9.58	40.30	62.63	-22.33	QP
5	0.265	18.85	9.53	28.38	51.27	-22.89	Average
6	0.265	33.47	9.53	43.00	61.27	-18.27	QP
7 PP	0.305	29.00	9.50	38.50	50.11	-11.61	Average
8	0.305	34.56	9.50	44.06	60.11	-16.05	QP
9	0.350	20.63	9.55	30.18	48.96	-18.78	Average
10	0.350	31.33	9.55	40.88	58.96	-18.08	QP
11	0.445	21.02	9.65	30.67	46.97	-16.30	Average
12 QP	0.445	31.77	9.65	41.42	56.97	-15.55	QP

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral line:

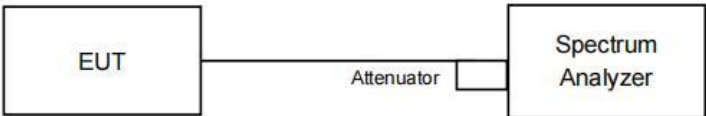


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.150	25.09	9.70	34.79	56.00	-21.21	Average	Neutral
2	0.150	37.01	9.70	46.71	66.00	-19.29	QP	Neutral
3	0.190	17.42	9.62	27.04	54.04	-27.00	Average	Neutral
4	0.190	28.71	9.62	38.33	64.04	-25.71	QP	Neutral
5	0.250	16.40	9.54	25.94	51.76	-25.82	Average	Neutral
6	0.250	29.85	9.54	39.39	61.76	-22.37	QP	Neutral
7 PP	0.305	28.05	9.49	37.54	50.11	-12.57	Average	Neutral
8 QP	0.305	33.99	9.49	43.48	60.11	-16.63	QP	Neutral
9	0.385	16.49	9.59	26.08	48.17	-22.09	Average	Neutral
10	0.385	27.37	9.59	36.96	58.17	-21.21	QP	Neutral
11	0.505	22.46	9.71	32.17	46.00	-13.83	Average	Neutral
12	0.505	29.19	9.71	38.90	56.00	-17.10	QP	Neutral

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

5.3 Conducted Peak & Average Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(3)
Test Method:	ANSI C63.10: 2020
Test Setup:	<i>Setup for Power meter measurement method</i>  <i>Setup for Spectrum analyser measurement method</i> 
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	30dBm
Test Results:	Pass

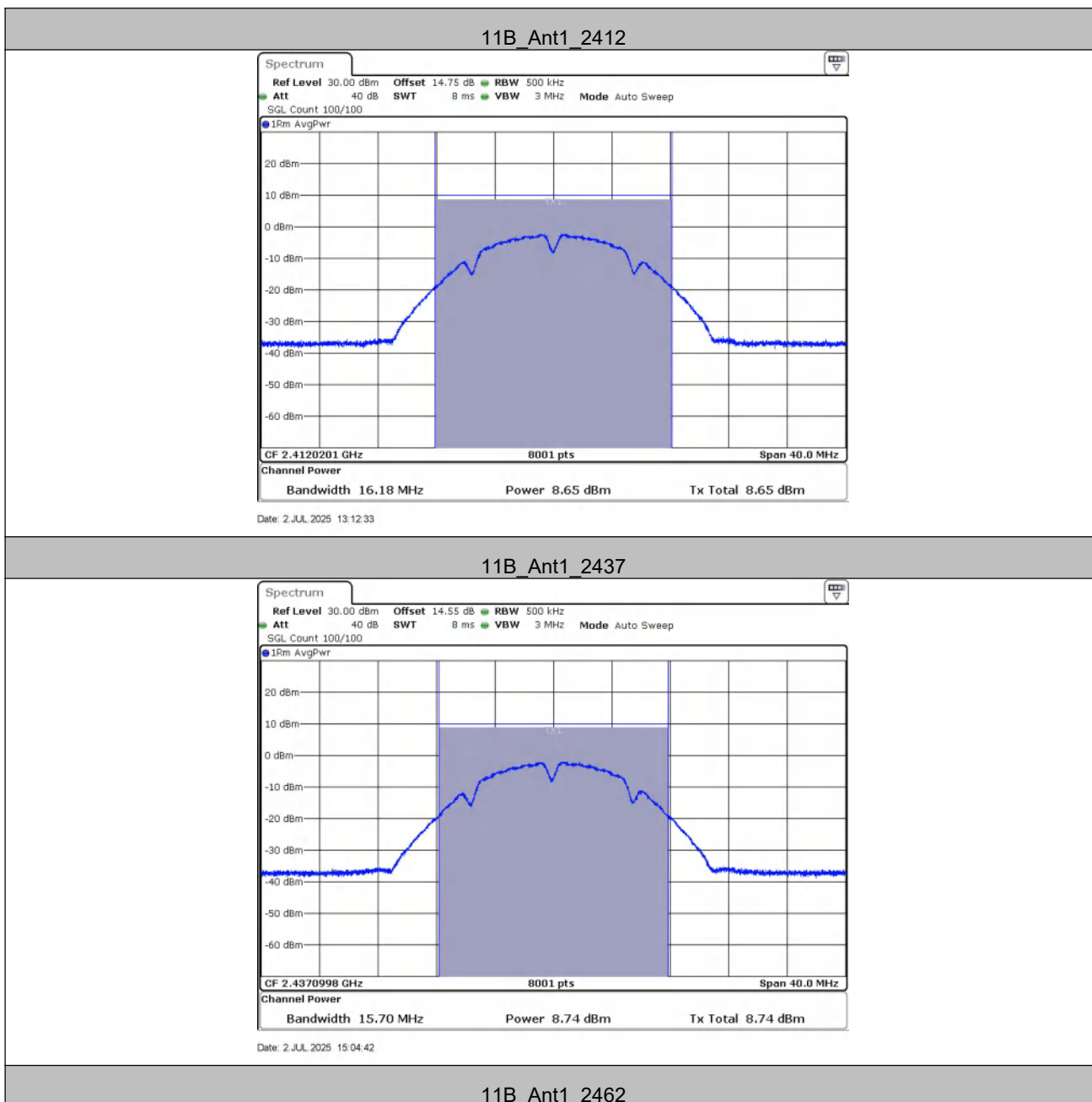
Test Result

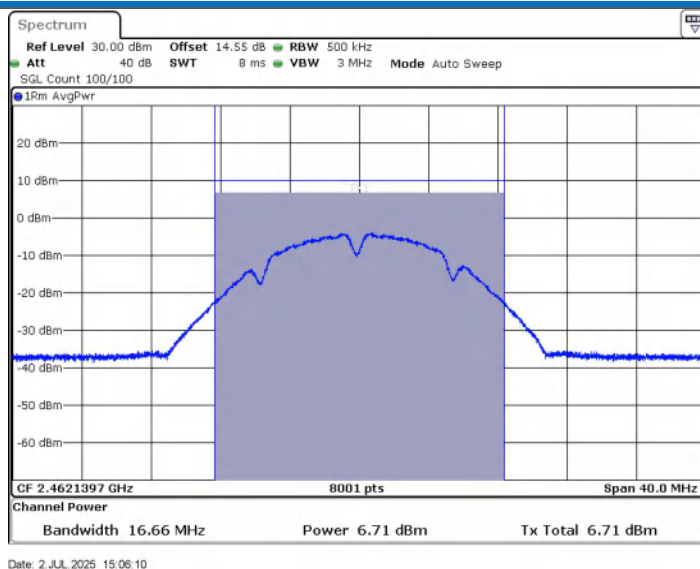
Test Mode	Frequency[MHz]	Result [dBm]	Limit [dBm]	Verdict
11B	2412	8.65	≤30.00	PASS
	2437	8.74	≤30.00	PASS
	2462	6.71	≤30.00	PASS
11G	2412	8.81	≤30.00	PASS
	2437	10.55	≤30.00	PASS
	2462	9.05	≤30.00	PASS
11N20SISO	2412	12.68	≤30.00	PASS
	2437	14.46	≤30.00	PASS
	2462	12.95	≤30.00	PASS
11N40SISO	2422	12.86	≤30.00	PASS
	2437	13.95	≤30.00	PASS
	2452	13.44	≤30.00	PASS
11AX20SISO	2412	8.57	≤30.00	PASS
	2437	10.31	≤30.00	PASS
	2462	8.88	≤30.00	PASS
11AX40SISO	2422	8.71	≤30.00	PASS
	2437	9.92	≤30.00	PASS
	2452	9.51	≤30.00	PASS

Note: Duty cycle correction factor details please see section 4.4.

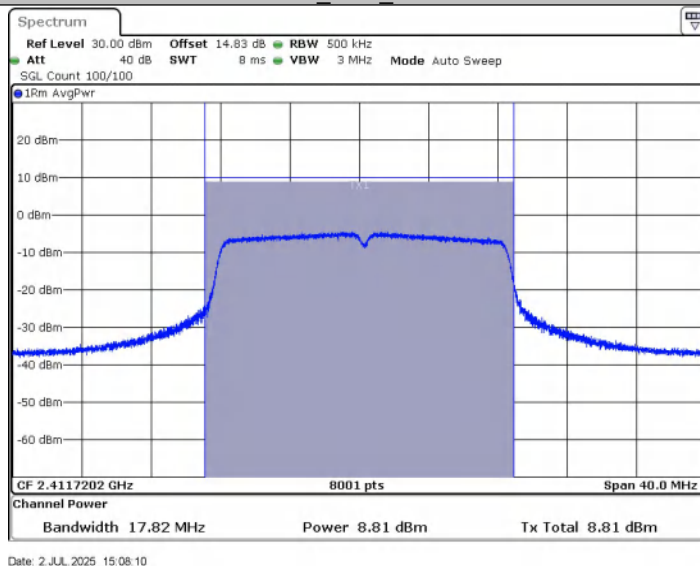
When Duty cycle >98%, D.C.F is not required.

Test Graphs

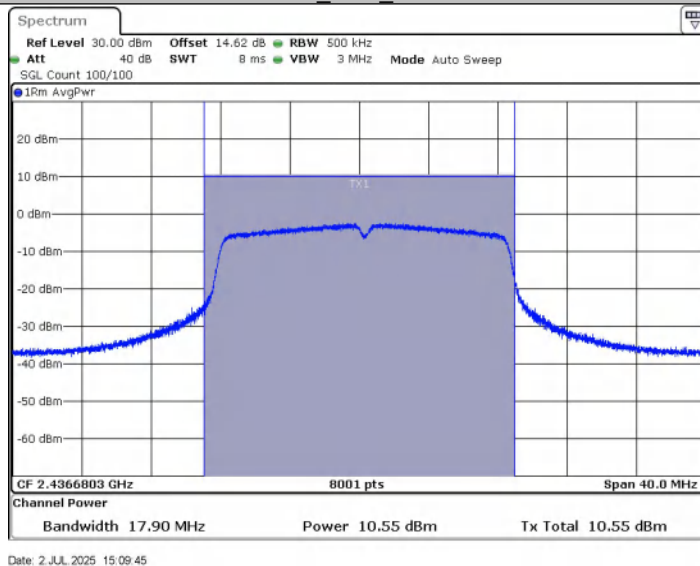




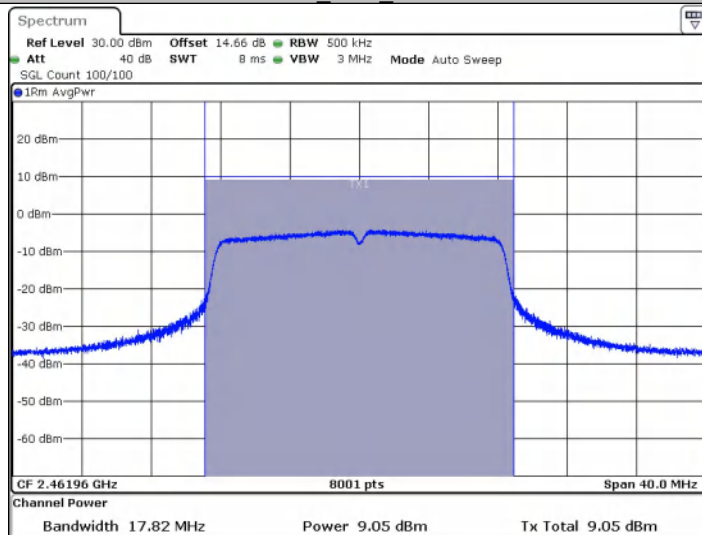
11G_Ant1_2412



11G_Ant1_2437

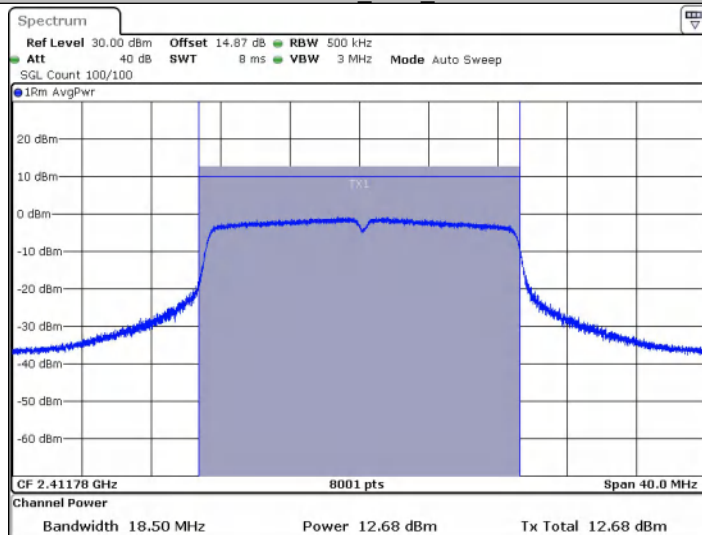


11G_Ant1_2462



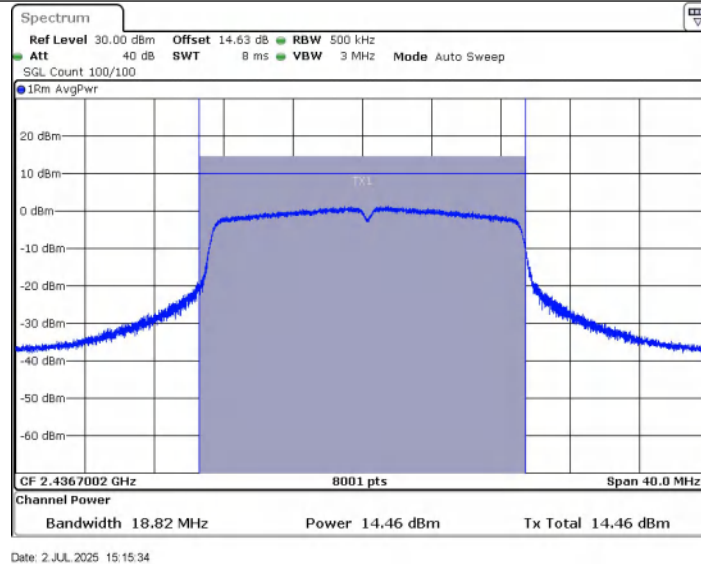
Date: 2 JUL 2025 15:10:58

11N20SISO_Ant1_2412

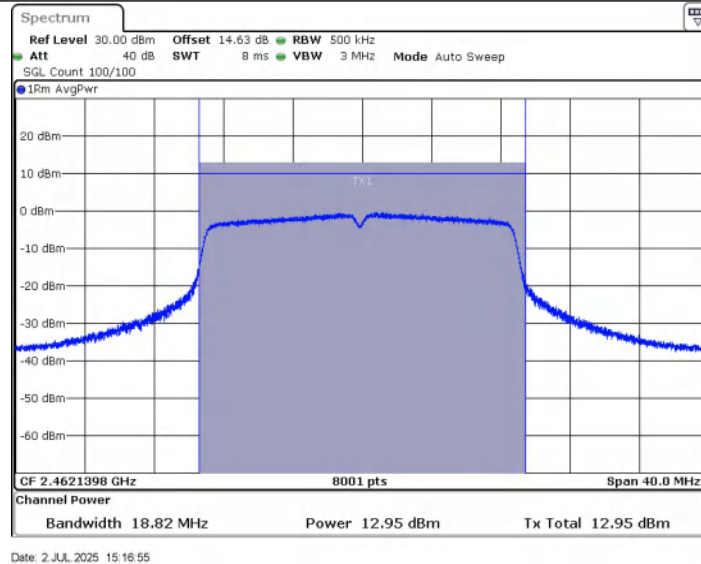


Date: 2 JUL 2025 15:12:39

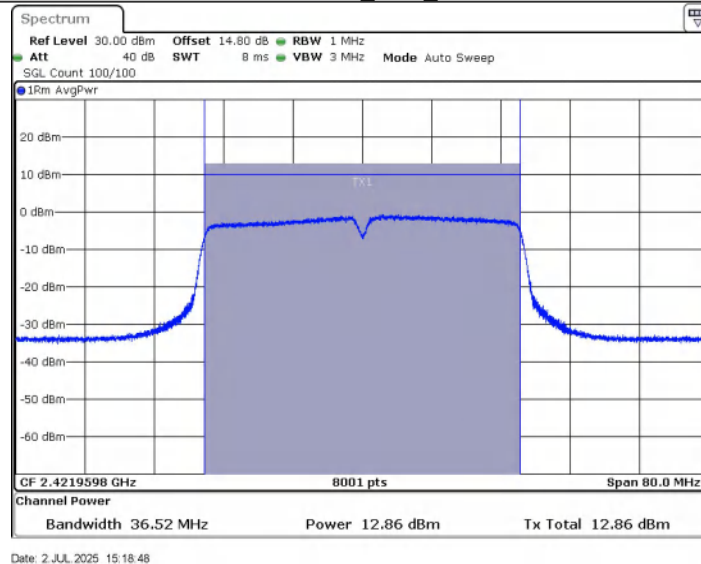
11N20SISO_Ant1_2437



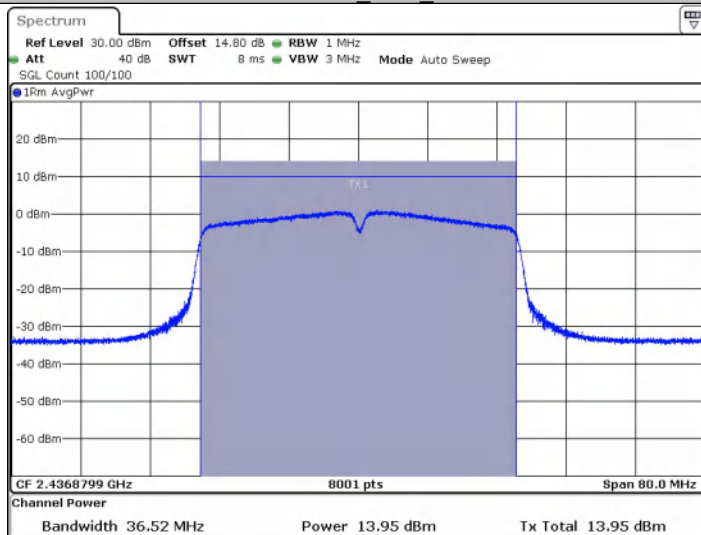
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422

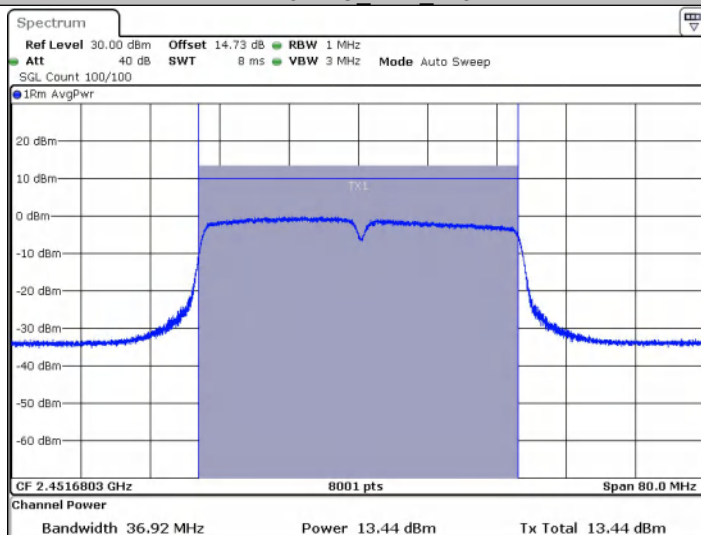


11N40SISO_Ant1_2437



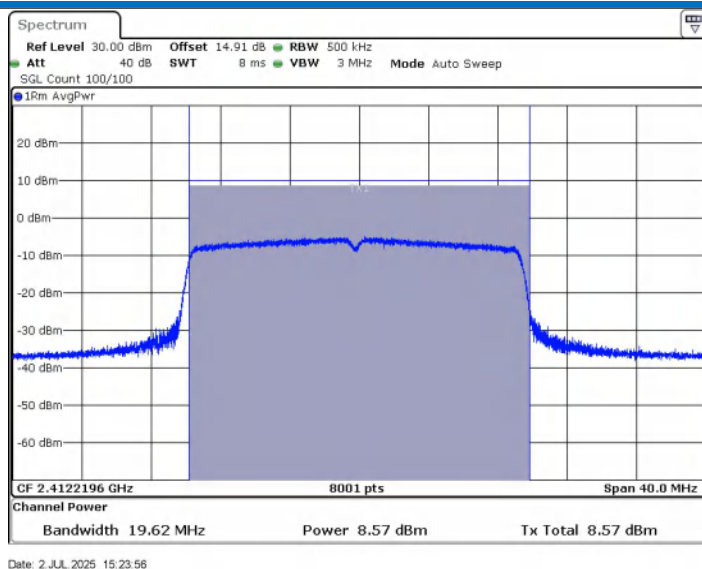
Date: 2 JUL 2025 15:20:35

11N40SISO_Ant1_2452

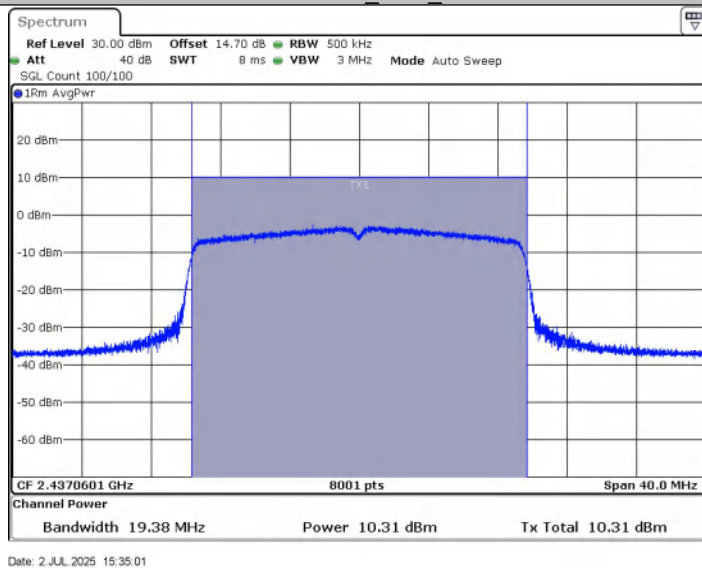


Date: 2 JUL 2025 15:22:03

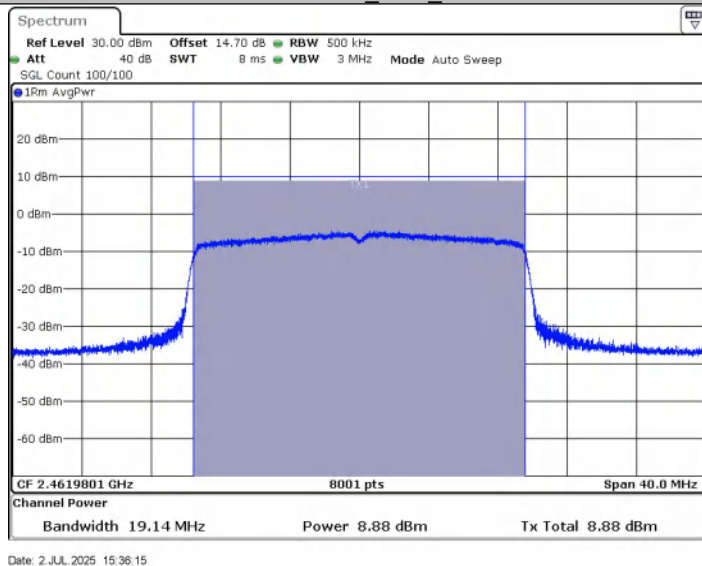
11AX20SISO_Ant1_2412



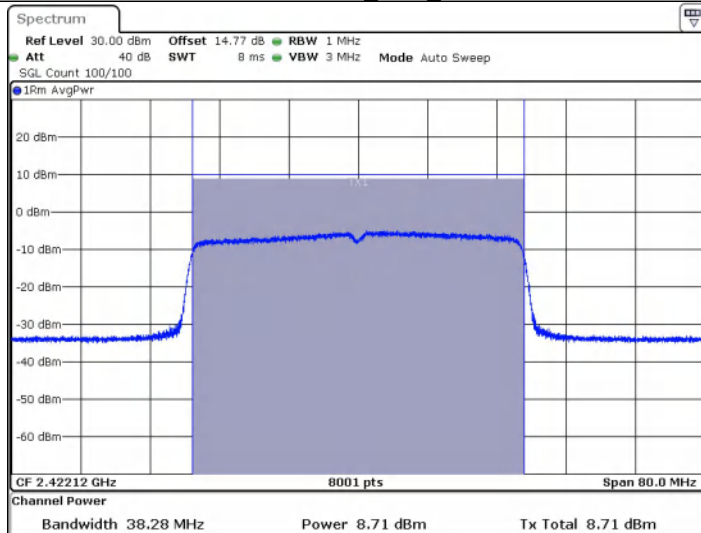
11AX20SISO_Ant1_2437



11AX20SISO_Ant1_2462

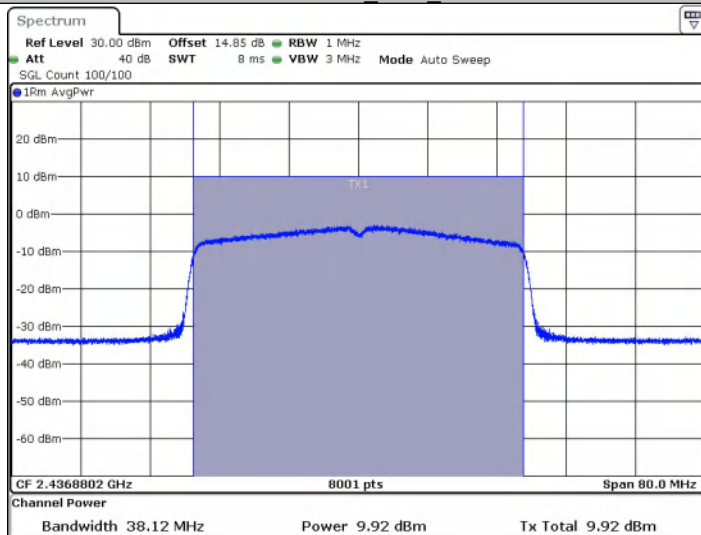


11AX40SISO_Ant1_2422



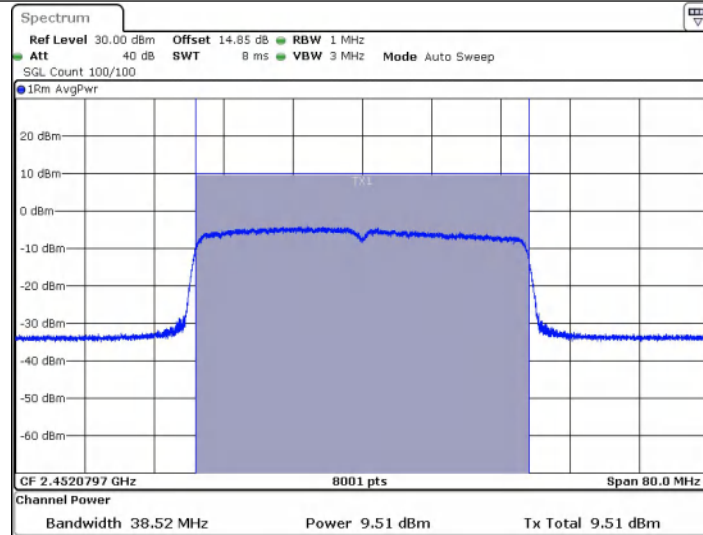
Date: 2 JUL 2025 15:38:51

11AX40SISO_Ant1_2437

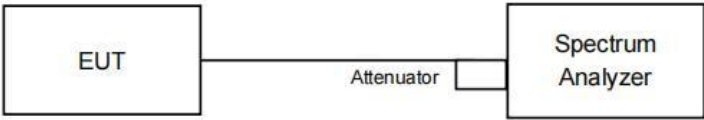


Date: 2 JUL 2025 15:40:29

11AX40SISO_Ant1_2452



5.4 99% Occupied Bandwidth

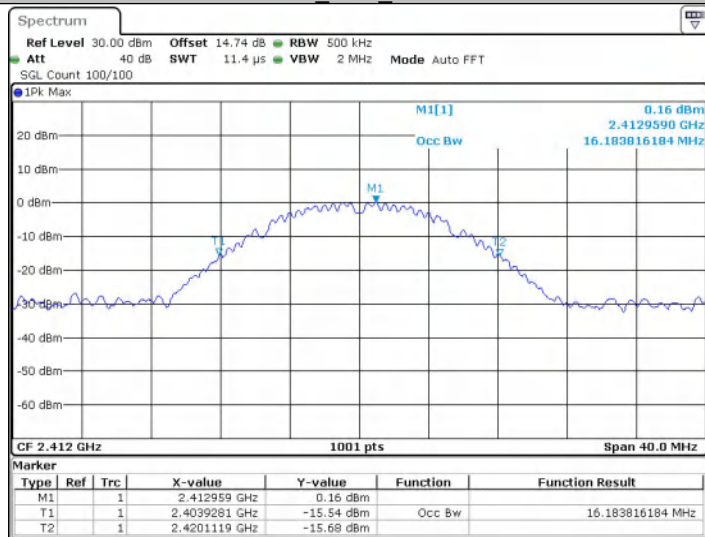
Test Requirement:	47 CFR Part 15C
Test Method:	ANSI C63.10: 2020
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Test Results:	Pass

Test Result

TestMode	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
11B	2412	16.184	2403.9281	2420.1119
	2437	15.704	2429.2478	2444.9520
	2462	16.663	2453.8082	2470.4715
11G	2412	17.822	2402.8092	2420.6314
	2437	17.902	2427.7293	2445.6314
	2462	17.822	2453.0490	2470.8711
11N20SISO	2412	18.501	2402.5295	2421.0310
	2437	18.821	2427.2897	2446.1109
	2462	18.821	2452.7293	2471.5504
11N40SISO	2422	36.523	2403.6983	2440.2218
	2437	36.523	2418.6184	2455.1419
	2452	36.923	2433.2188	2470.1419
11AX20SISO	2412	19.62	2402.4096	2422.0300
	2437	19.381	2427.3696	2446.7502
	2462	19.141	2452.4096	2471.5504
11AX40SISO	2422	38.282	2402.9790	2441.2607
	2437	38.122	2417.8192	2455.9411
	2452	38.521	2432.8192	2471.3407

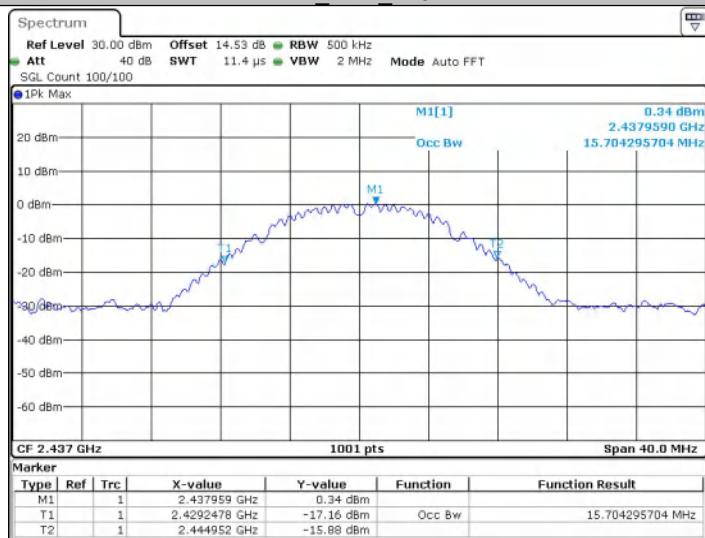
Test Graphs

11B_Ant1_2412



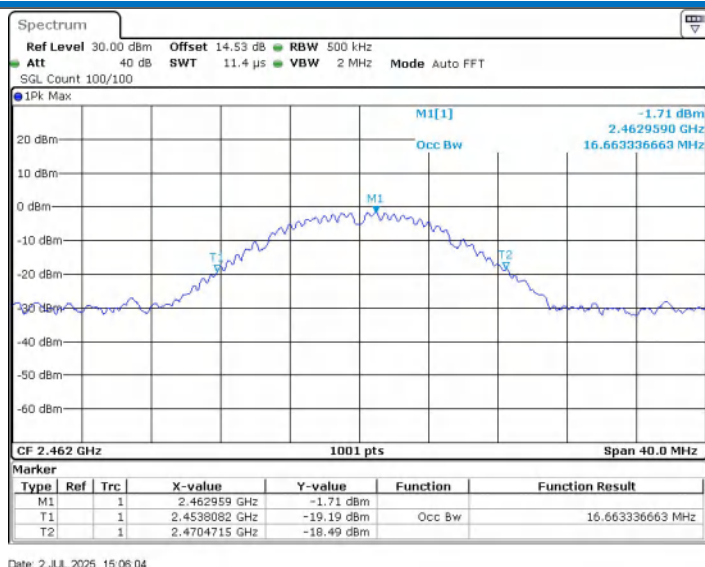
Date: 2 JUL 2025 13:12:27

11B_Ant1_2437

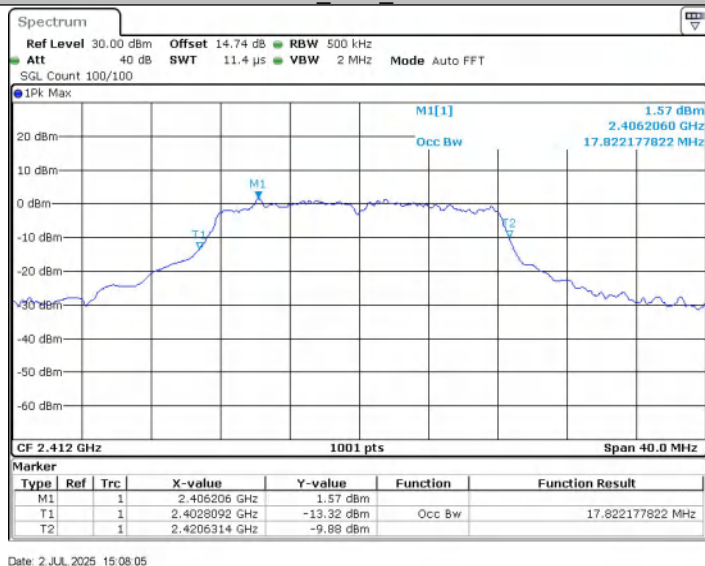


Date: 2 JUL 2025 15:04:37

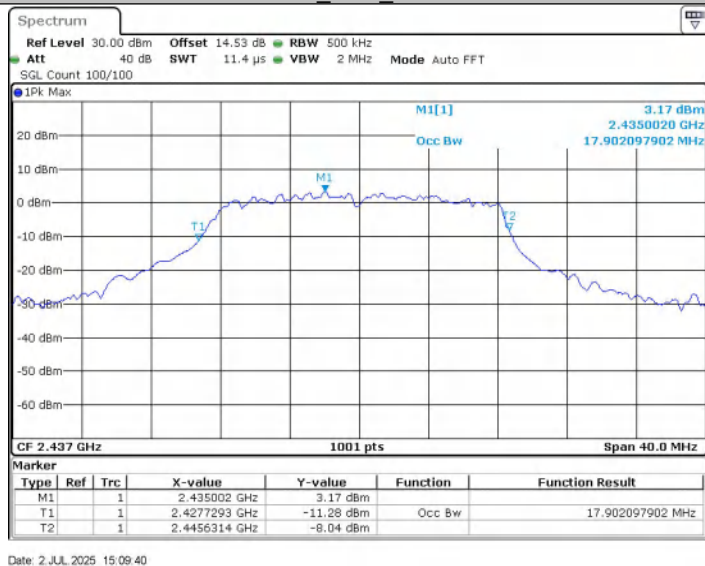
11B_Ant1_2462



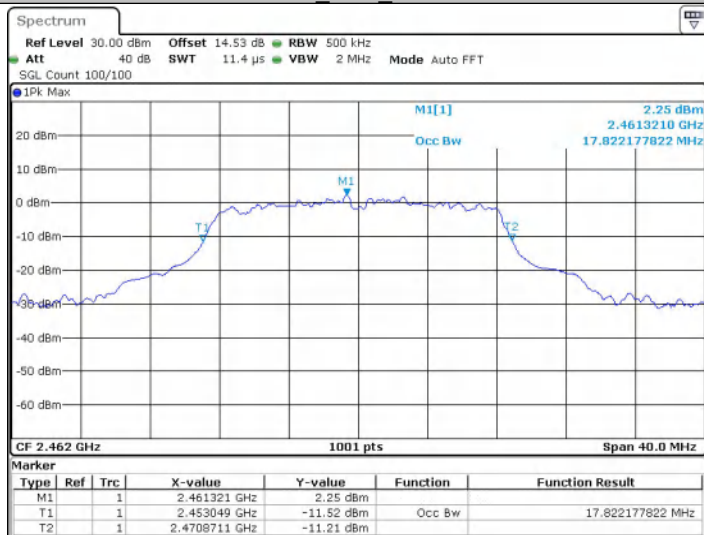
11G_Ant1_2412



11G_Ant1_2437

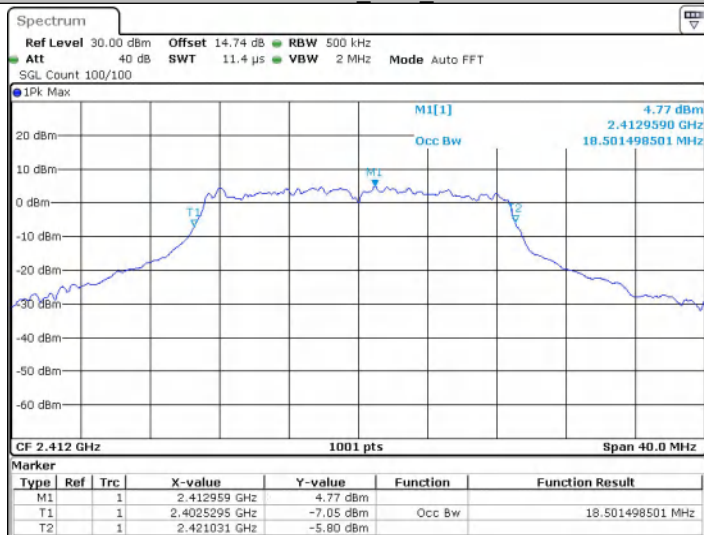


11G_Ant1_2462



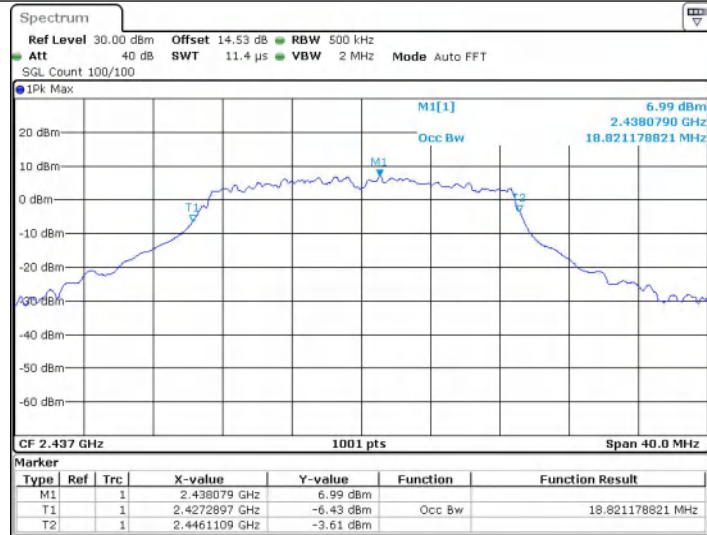
Date: 2 JUL 2025 15:10:53

11N20SISO_Ant1_2412

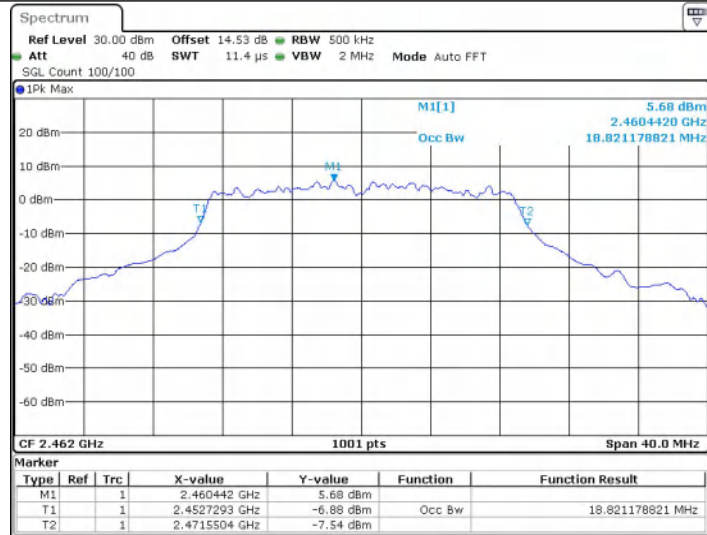


Date: 2 JUL 2025 15:12:34

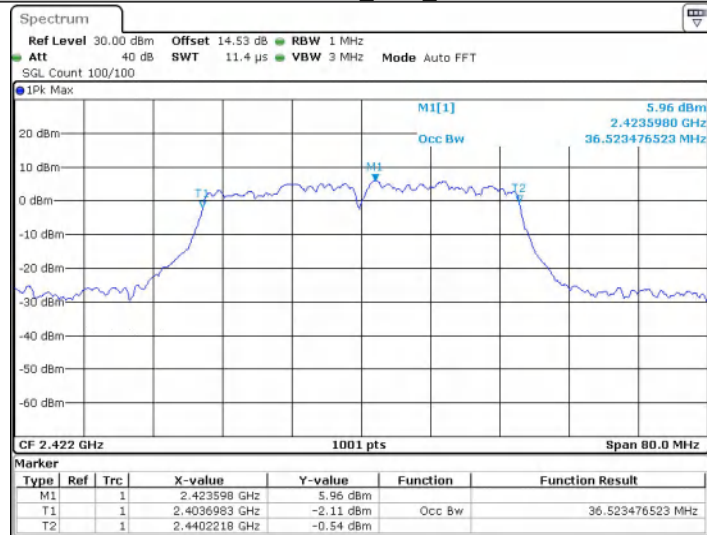
11N20SISO_Ant1_2437



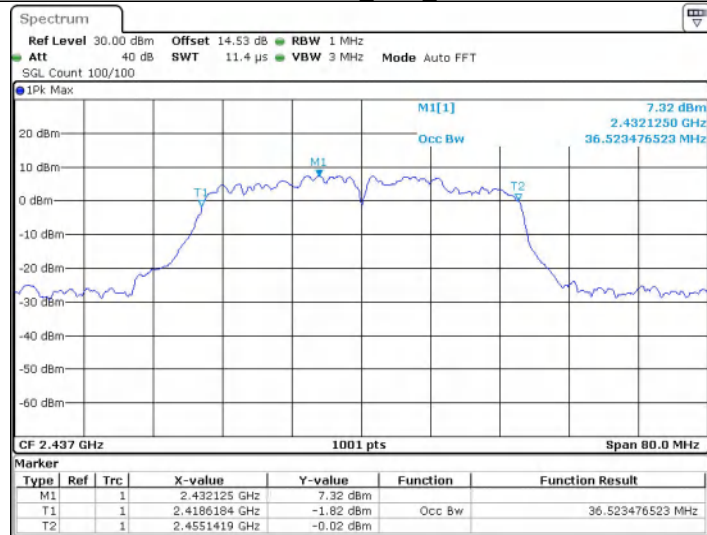
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422

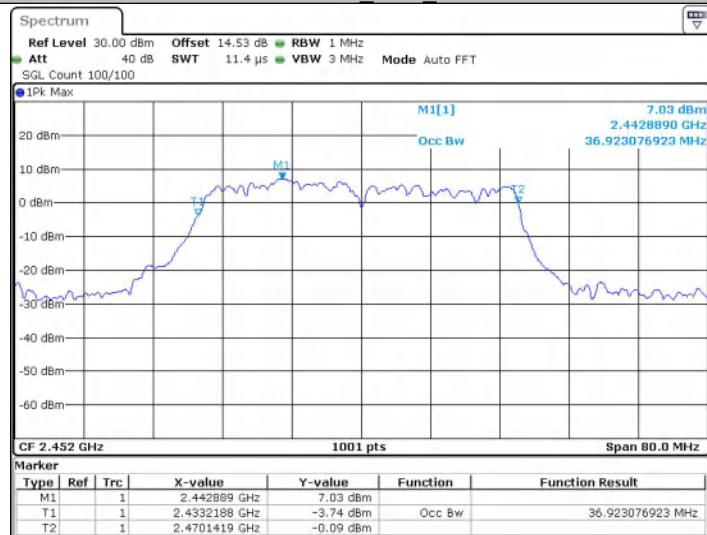


11N40SISO_Ant1_2437



Date: 2 JUL 2025 15:20:29

11N40SISO_Ant1_2452

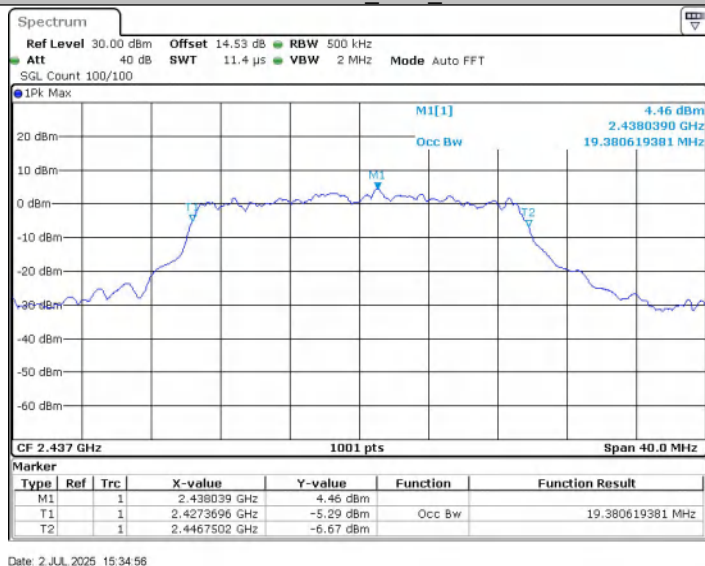


Date: 2 JUL 2025 15:21:57

11AX20SISO_Ant1_2412



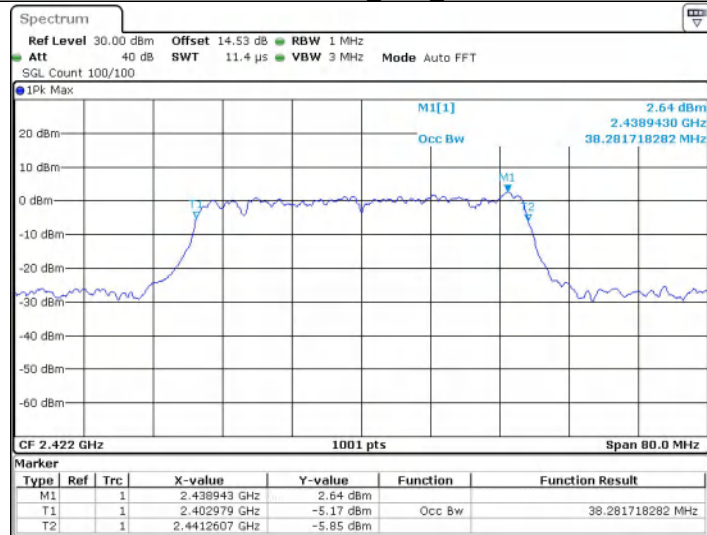
11AX20SISO_Ant1_2437



11AX20SISO_Ant1_2462

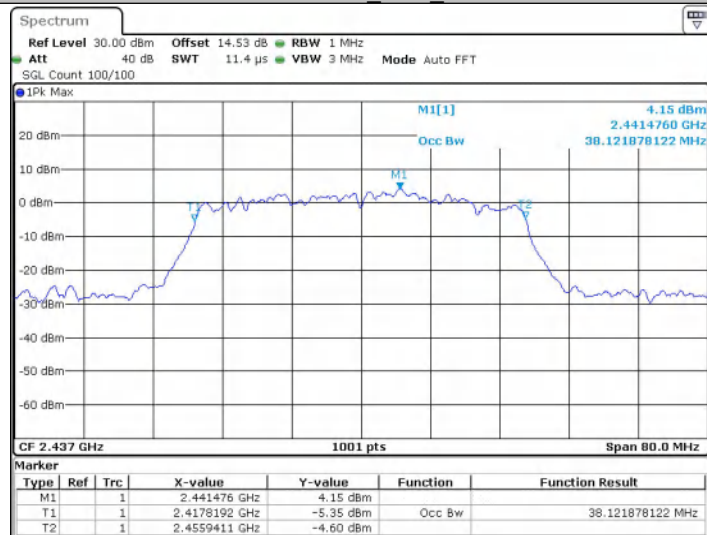


11AX40SISO_Ant1_2422



Date: 2 JUL 2025 15:38:45

11AX40SISO_Ant1_2437



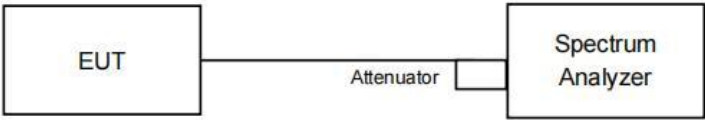
Date: 2 JUL 2025 15:40:23

11AX40SISO_Ant1_2452



Date: 2 JUL 2025 15:41:42

5.5 6dB Occupied Bandwidth

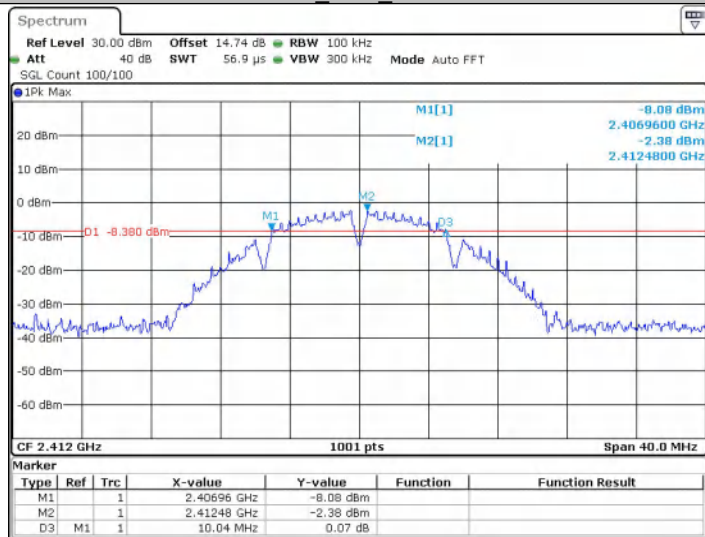
Test Requirement:	47 CFR Part 15C Section 15.247 (a)(2)
Test Method:	ANSI C63.10: 2020
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	≥ 500 kHz
Test Results:	Pass

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.840	0.5	PASS
		2437	8.640	0.5	PASS
		2462	9.120	0.5	PASS
11G	Ant1	2412	15.720	0.5	PASS
		2437	16.120	0.5	PASS
		2462	16.600	0.5	PASS
11N20SISO	Ant1	2412	15.200	0.5	PASS
		2437	17.800	0.5	PASS
		2462	15.200	0.5	PASS
11N40SISO	Ant1	2422	36.640	0.5	PASS
		2437	36.240	0.5	PASS
		2452	36.560	0.5	PASS

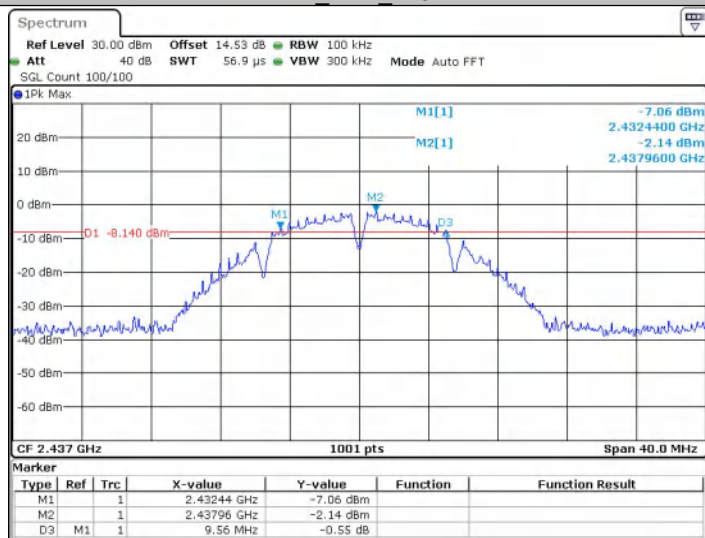
Test Graphs

11B_Ant1_2412



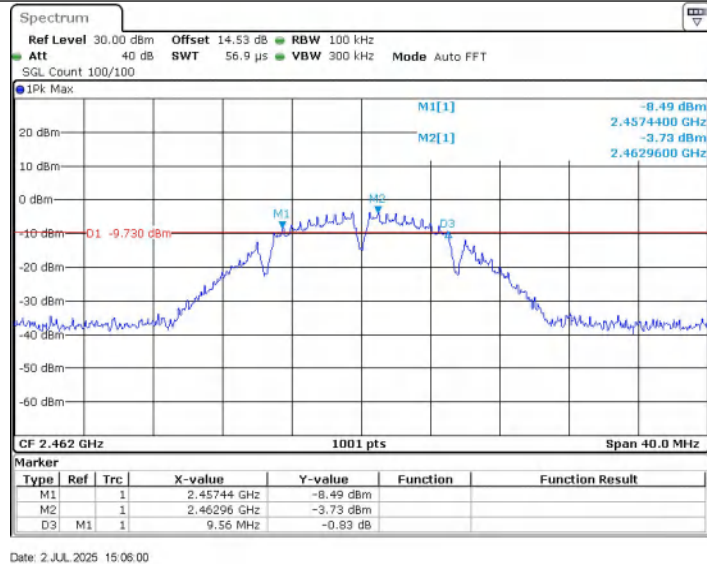
Date: 2 JUL 2025 13:12:23

11B_Ant1_2437

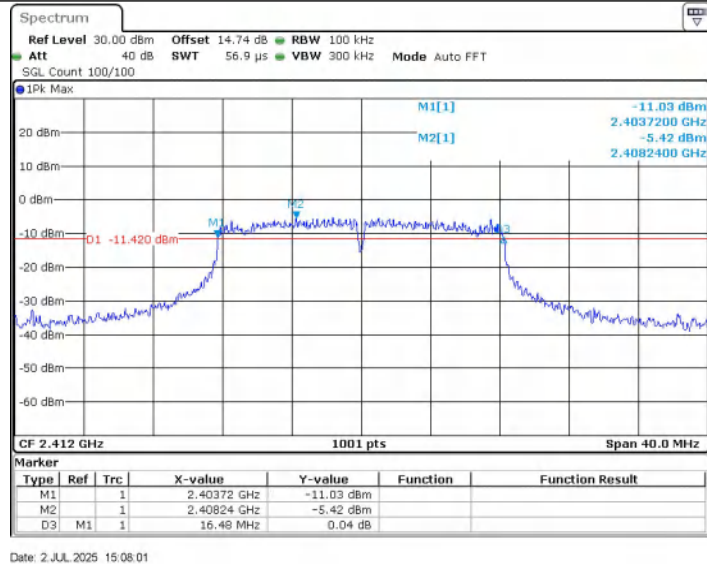


Date: 2 JUL 2025 15:04:33

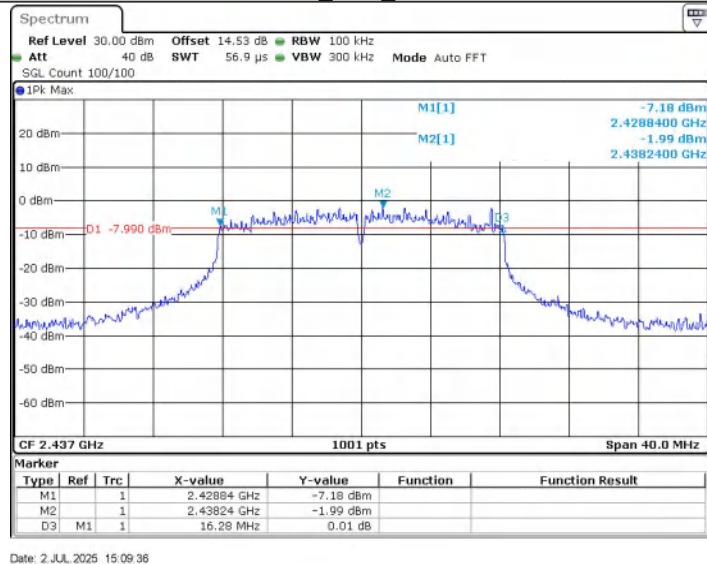
11B_Ant1_2462



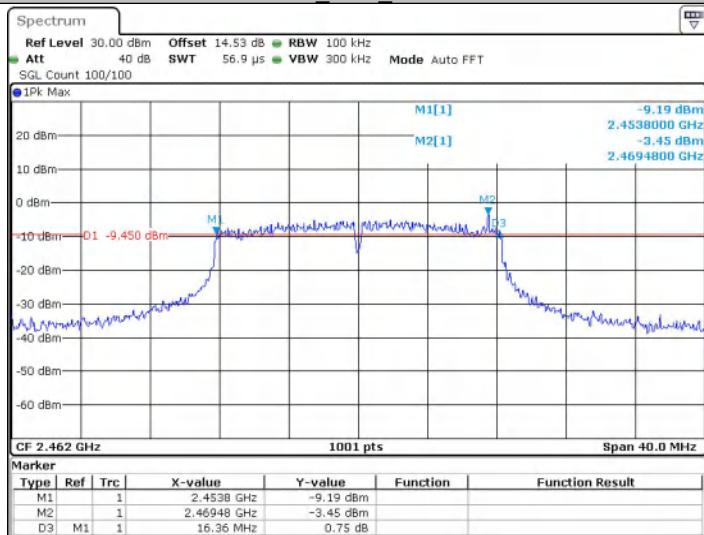
11G_Ant1_2412



11G_Ant1_2437

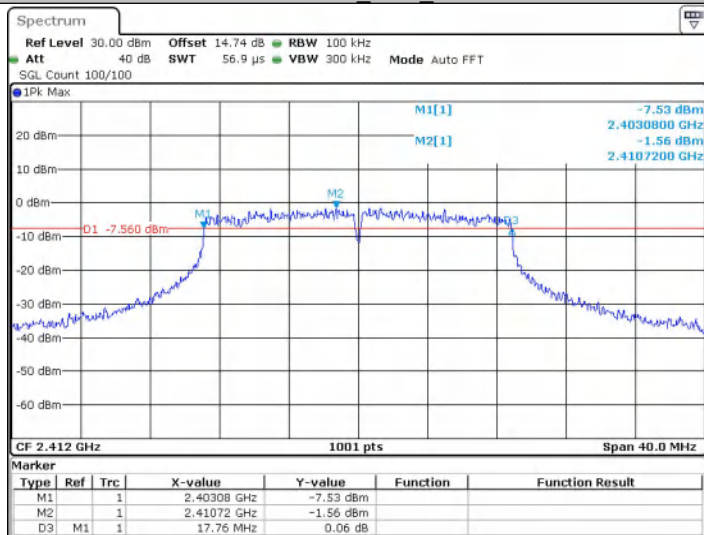


11G_Ant1_2462



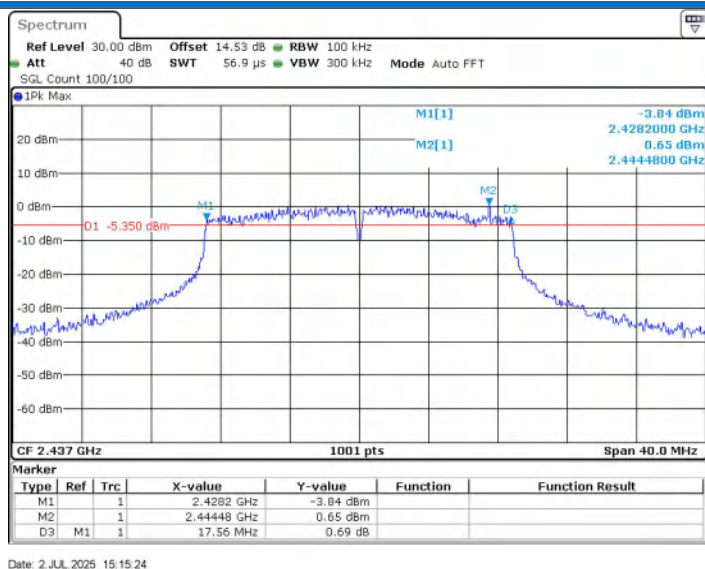
Date: 2 JUL 2025 15:10:49

11N20SISO_Ant1_2412

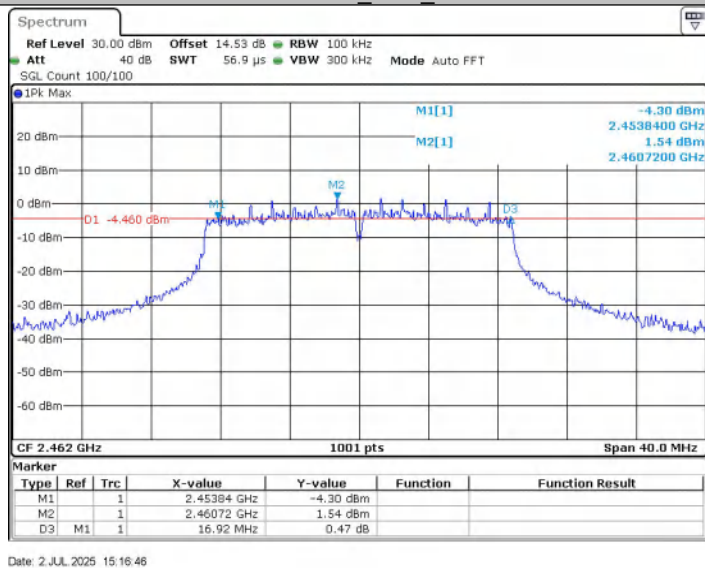


Date: 2 JUL 2025 15:12:30

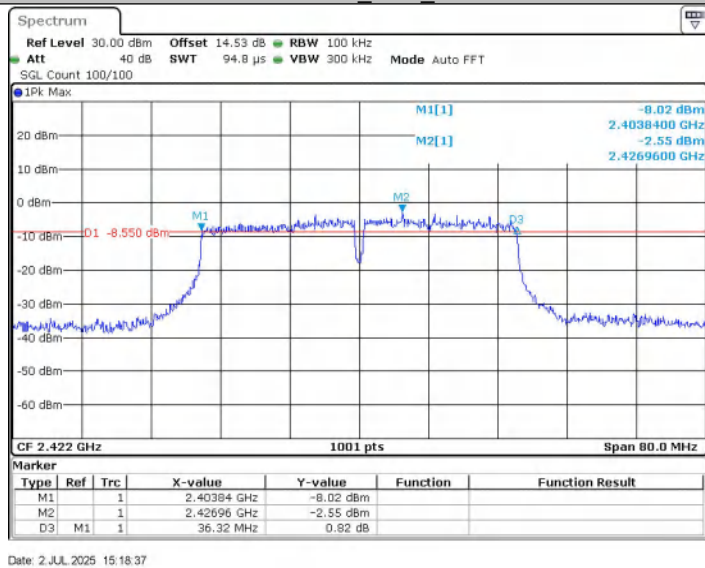
11N20SISO_Ant1_2437



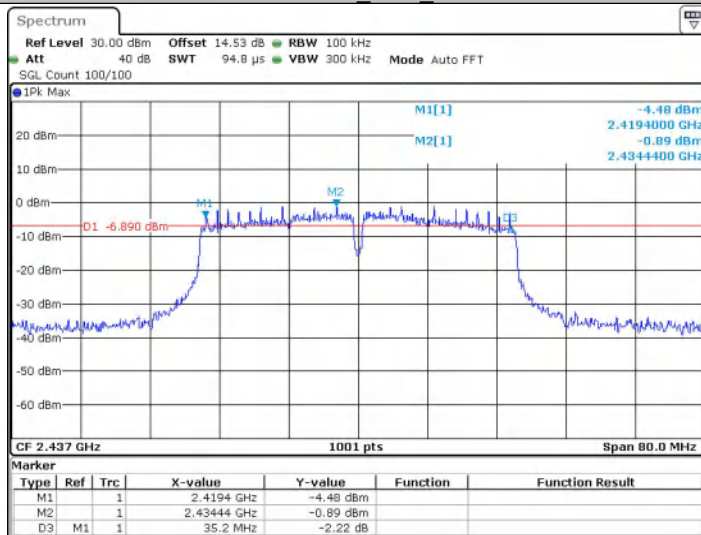
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422

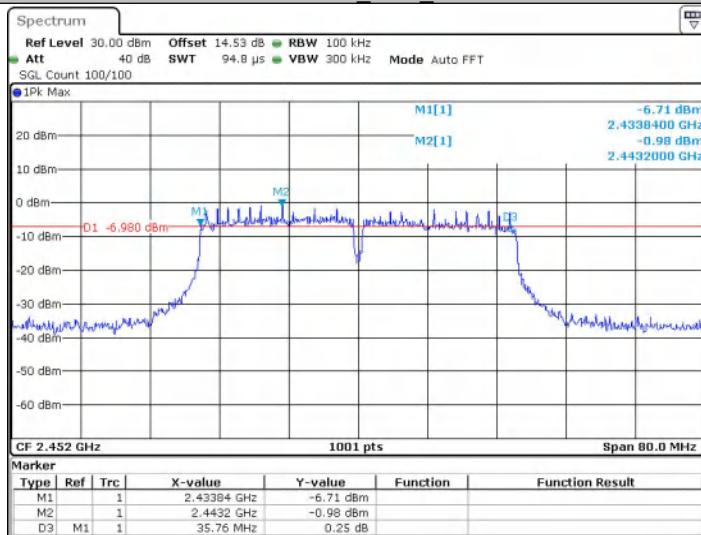


11N40SISO_Ant1_2437



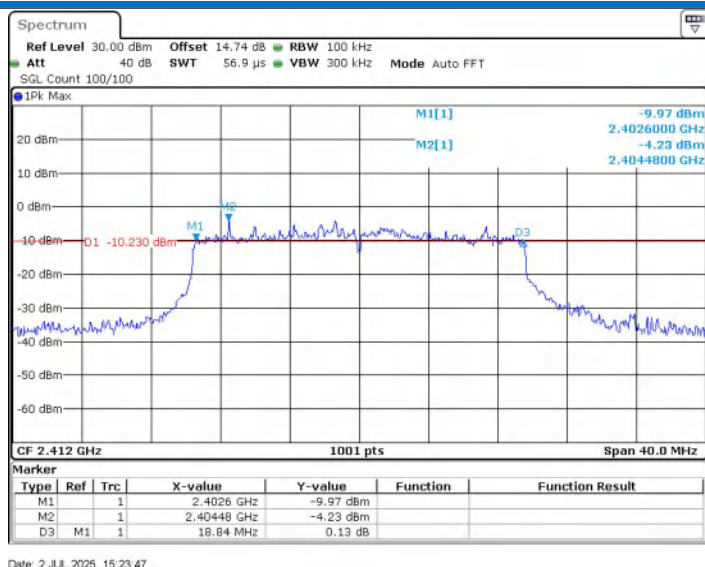
Date: 2 JUL 2025 15:20:25

11N40SISO_Ant1_2452

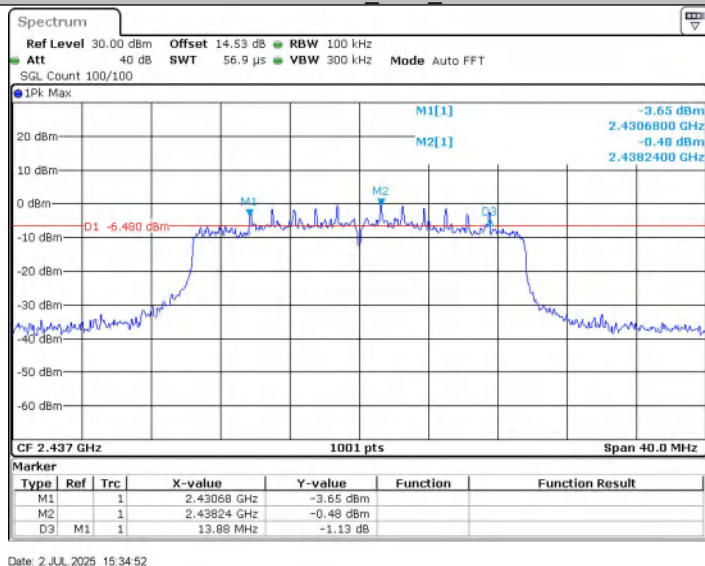


Date: 2 JUL 2025 15:21:53

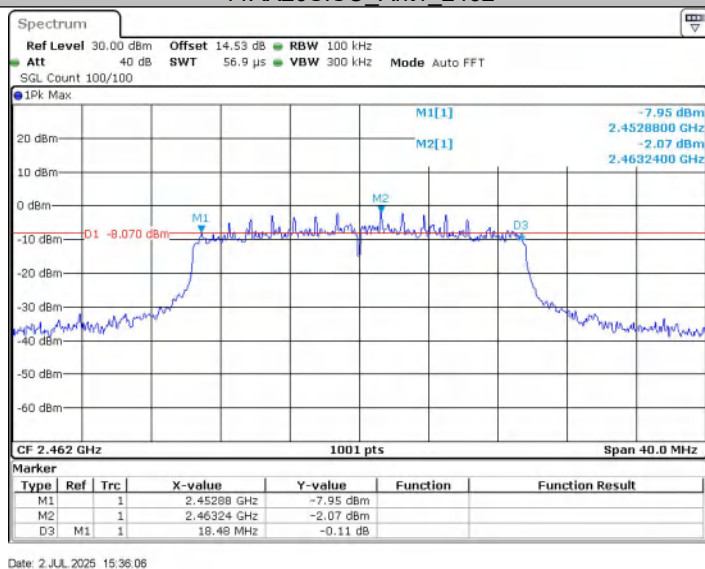
11AX20SISO_Ant1_2412



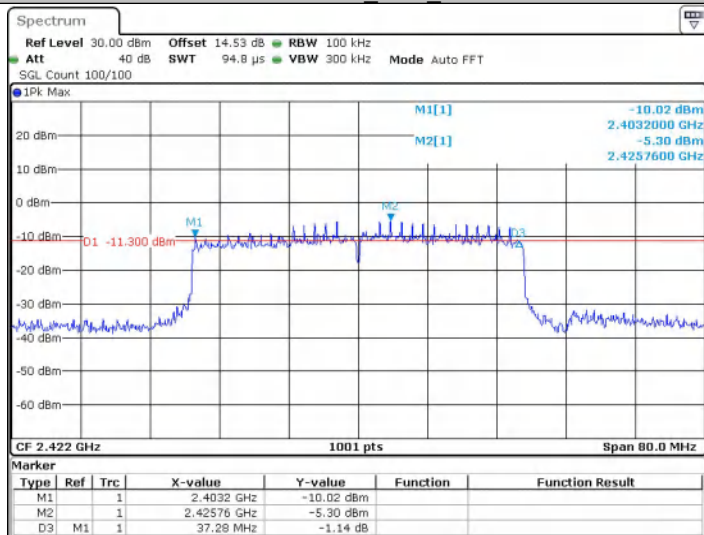
11AX20SISO_Ant1_2437



11AX20SISO_Ant1_2462

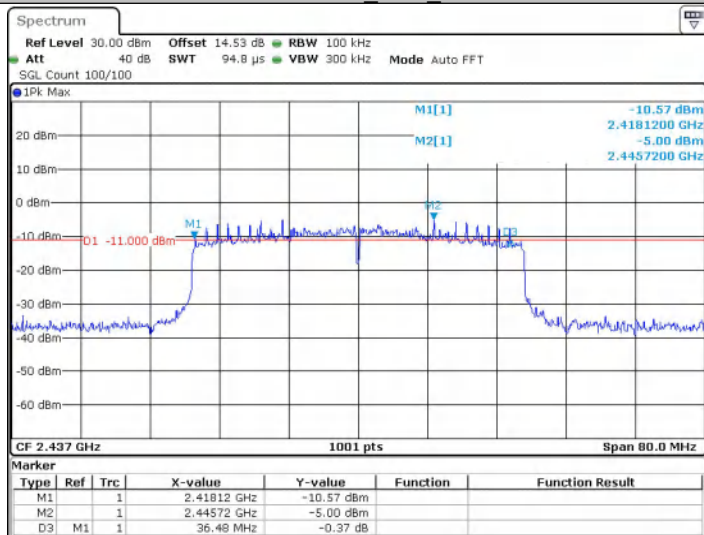


11AX40SISO_Ant1_2422



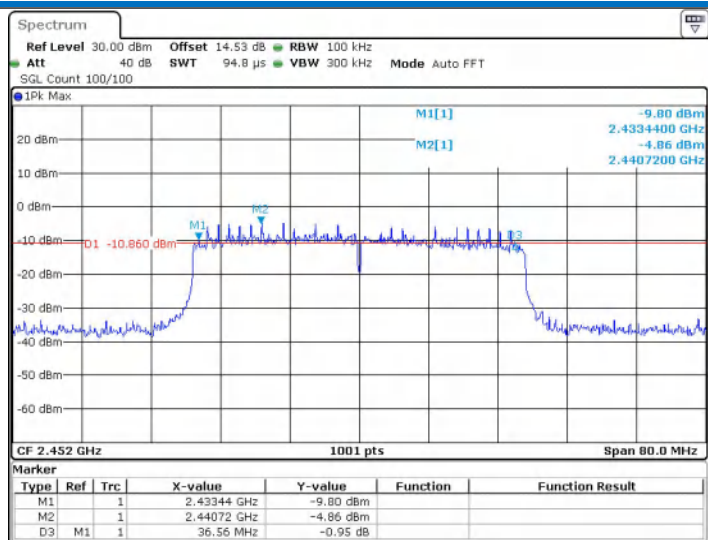
Date: 2 JUL 2025 15:38:40

11AX40SISO_Ant1_2437



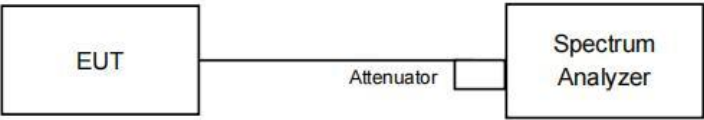
Date: 2 JUL 2025 15:40:19

11AX40SISO_Ant1_2452



Date: 2 JUL 2025 15:41:37

5.6 Power Spectral Density

Test Requirement:	47 CFR Part 15C Section 15.247 (e)
Test Method:	ANSI C63.10: 2020
Test Setup:	 $\text{Offset} = \text{cable loss} + \text{attenuation factor}$
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	$\leq 8.00 \text{ dBm/3kHz}$
Test Results:	Pass

Test Result

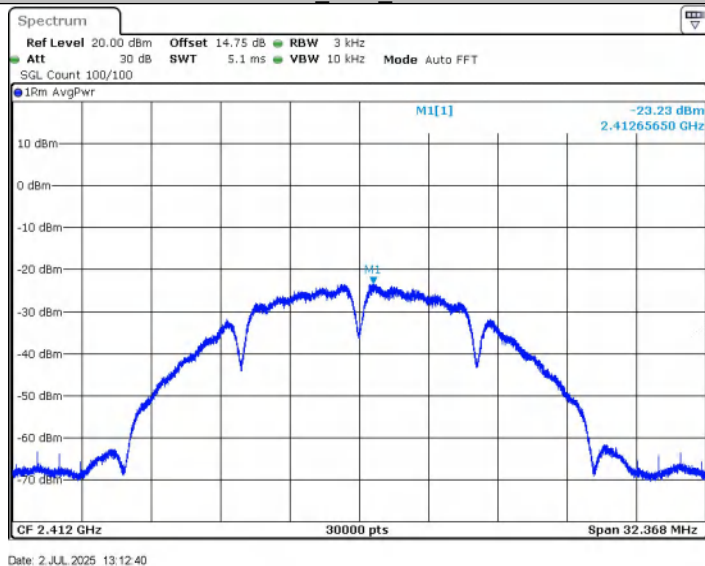
TestMode	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	2412	-23.23	≤8.00	PASS
	2437	-22.68	≤8.00	PASS
	2462	-25.25	≤8.00	PASS
11G	2412	-24.97	≤8.00	PASS
	2437	-22.69	≤8.00	PASS
	2462	-24.82	≤8.00	PASS
11N20SISO	2412	-21.34	≤8.00	PASS
	2437	-18.86	≤8.00	PASS
	2462	-20.66	≤8.00	PASS
11N40SISO	2422	-21.37	≤8.00	PASS
	2437	-20.54	≤8.00	PASS
	2452	-21.61	≤8.00	PASS
11AX20SISO	2412	-23.73	≤8.00	PASS
	2437	-22.23	≤8.00	PASS
	2462	-24.11	≤8.00	PASS
11AX40SISO	2422	-27.29	≤8.00	PASS
	2437	-25.57	≤8.00	PASS
	2452	-25.59	≤8.00	PASS

Note: Duty cycle correction factor details please see section 4.4.

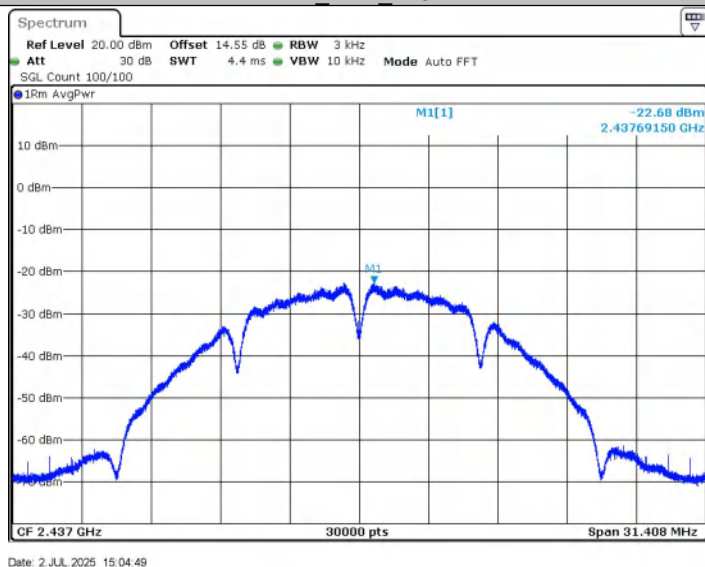
When Duty cycle >98%, D.C.F is not required.

Test Graphs

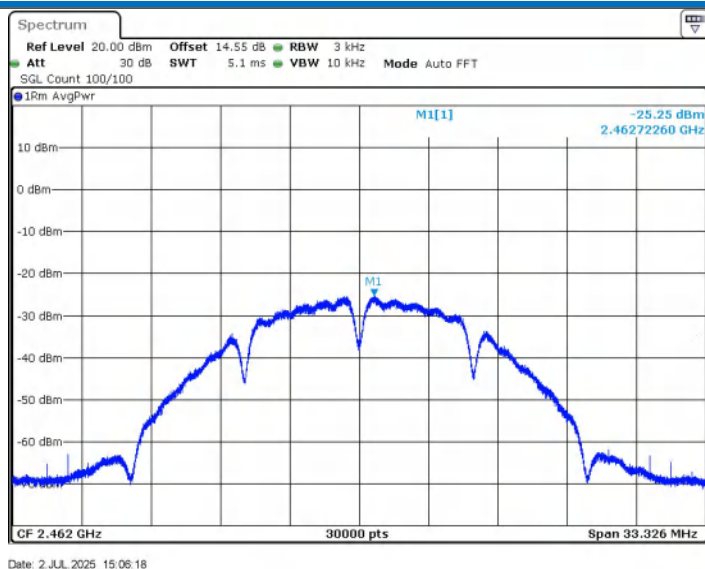
11B_Ant1_2412



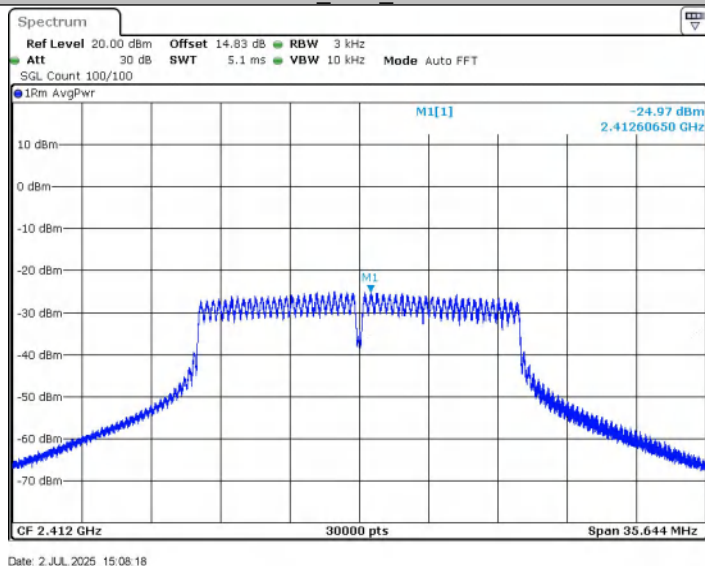
11B_Ant1_2437



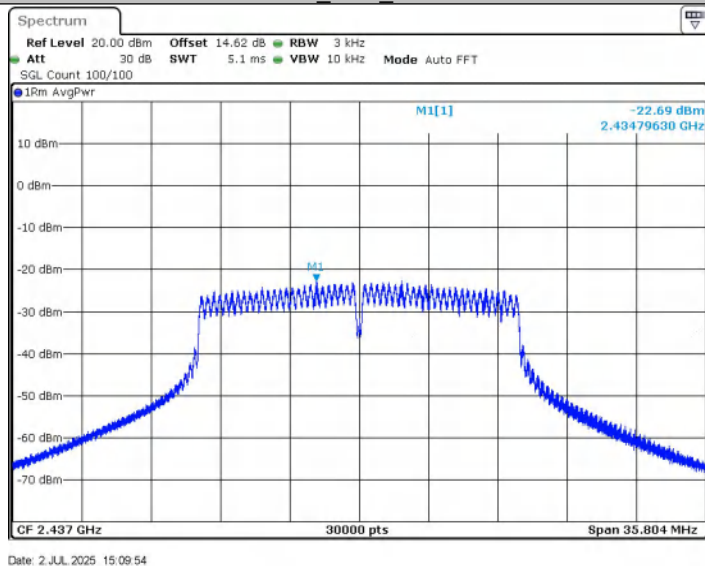
11B_Ant1_2462



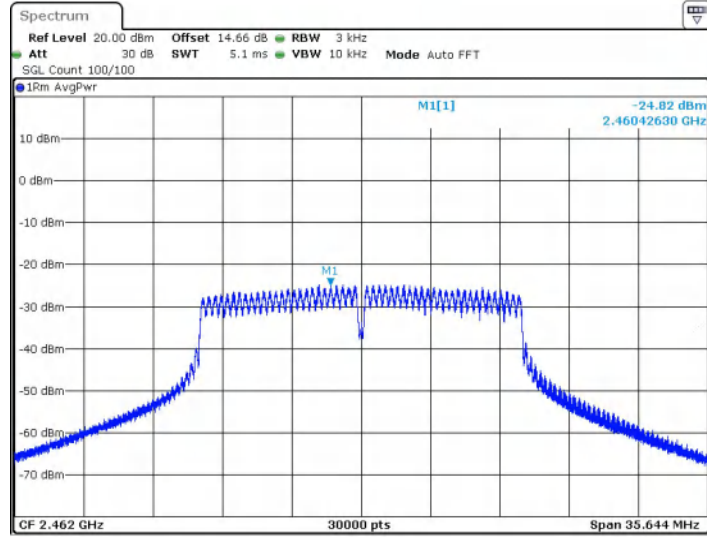
11G_Ant1_2412



11G_Ant1_2437

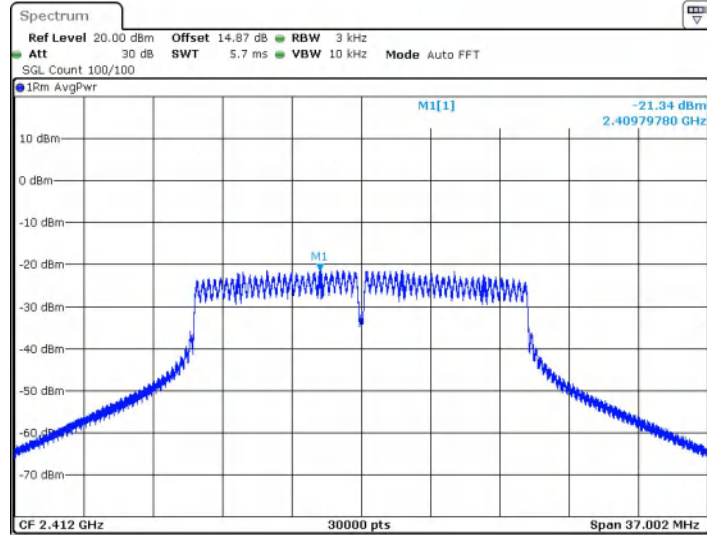


11G_Ant1_2462



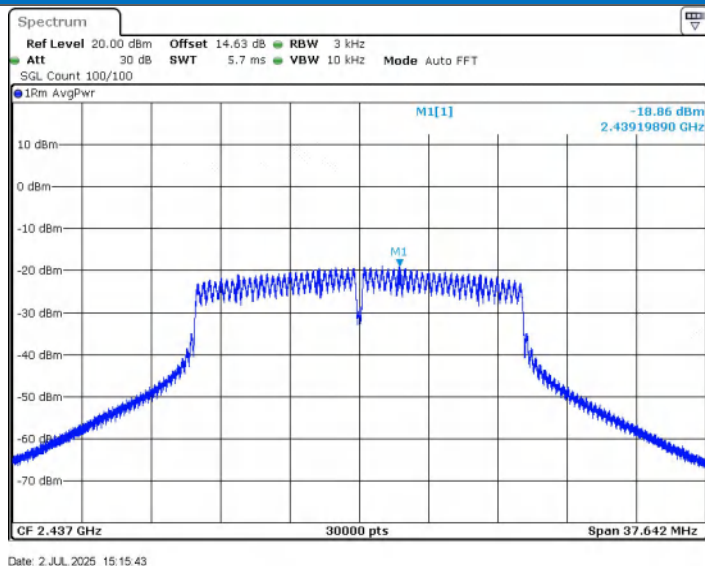
Date: 2 JUL 2025 15:11:05

11N20SISO_Ant1_2412

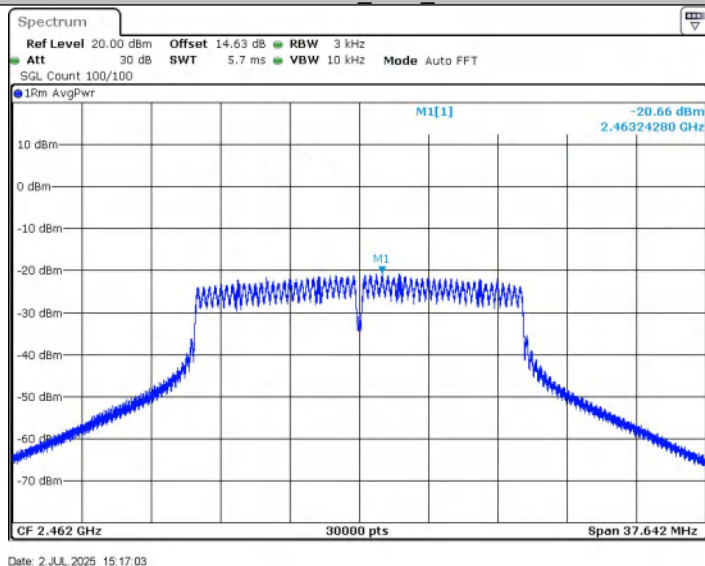


Date: 2 JUL 2025 15:12:47

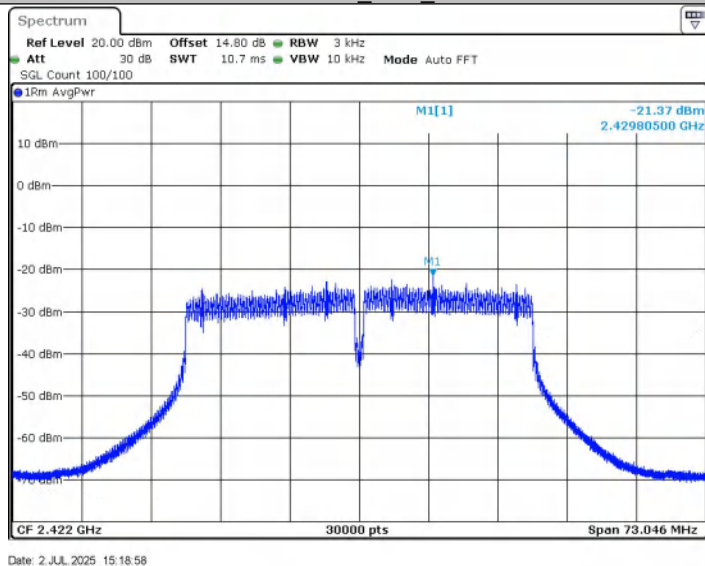
11N20SISO_Ant1_2437



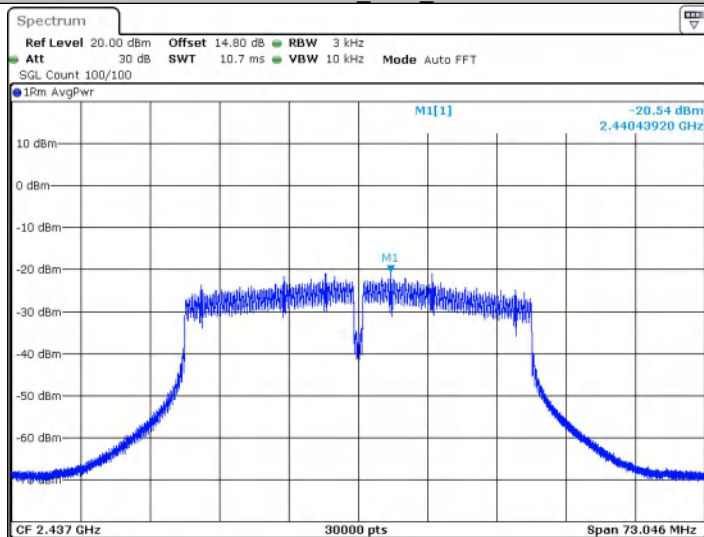
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422

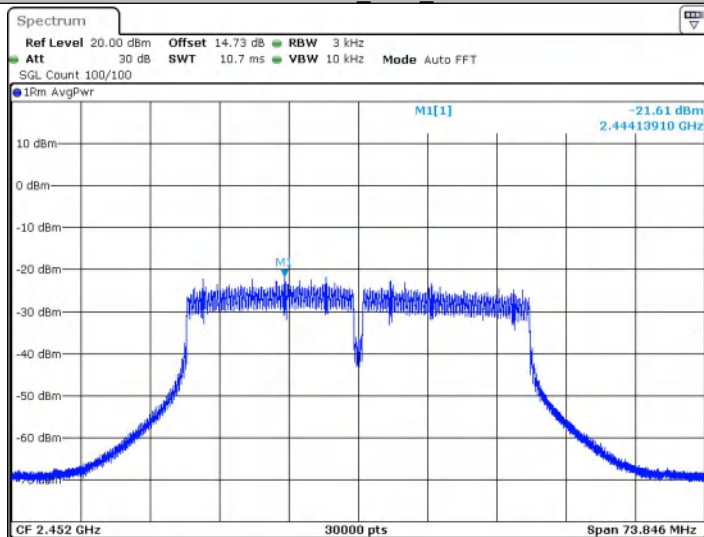


11N40SISO_Ant1_2437



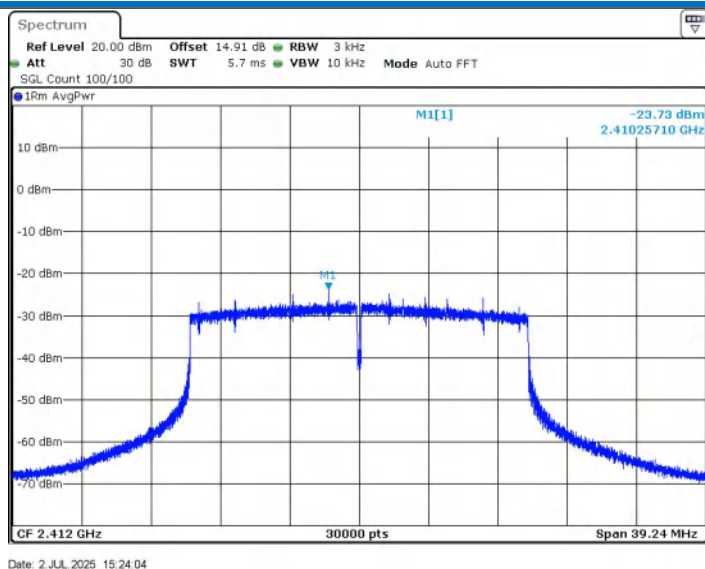
Date: 2 JUL 2025 15:20:45

11N40SISO_Ant1_2452

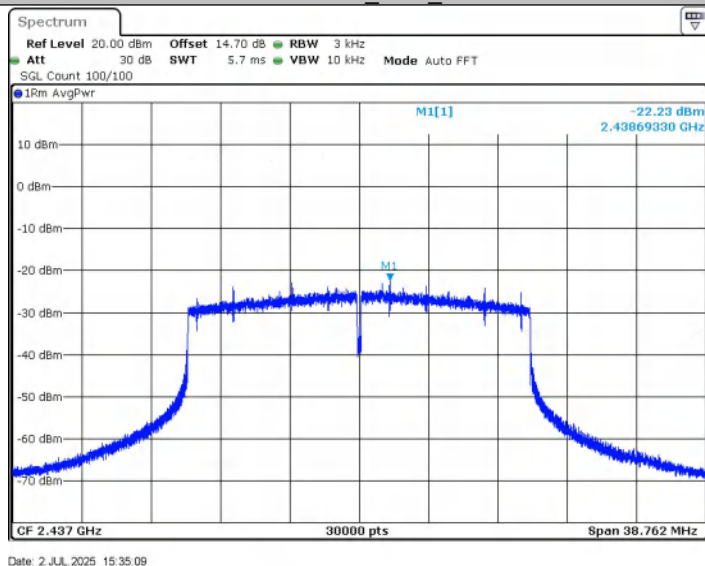


Date: 2 JUL 2025 15:22:14

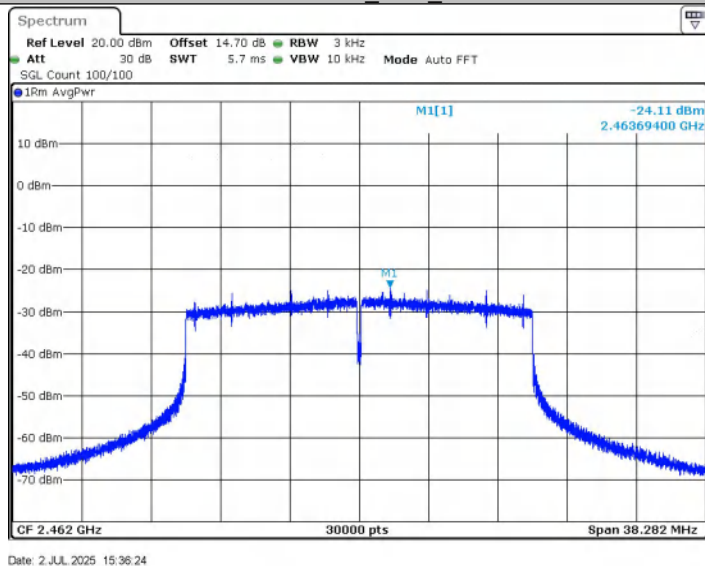
11AX20SISO_Ant1_2412



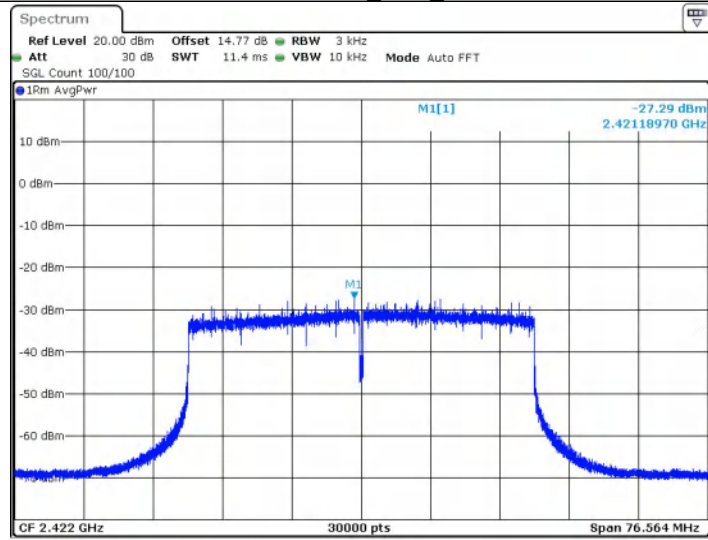
11AX20SISO_Ant1_2437



11AX20SISO_Ant1_2462

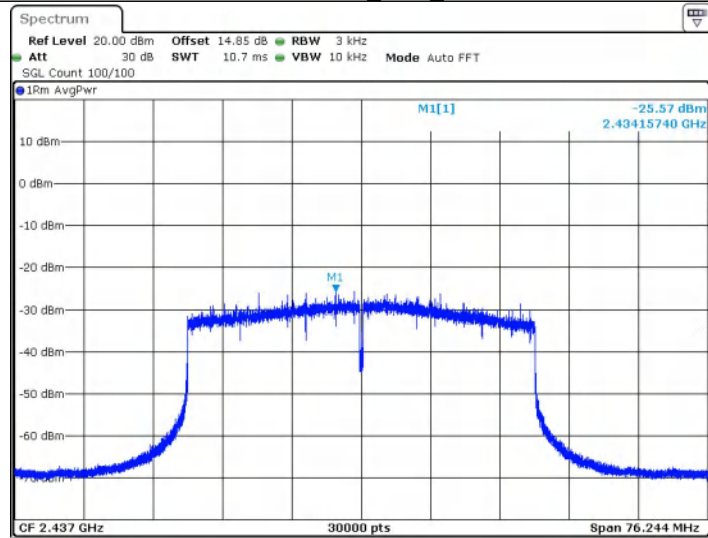


11AX40SISO_Ant1_2422



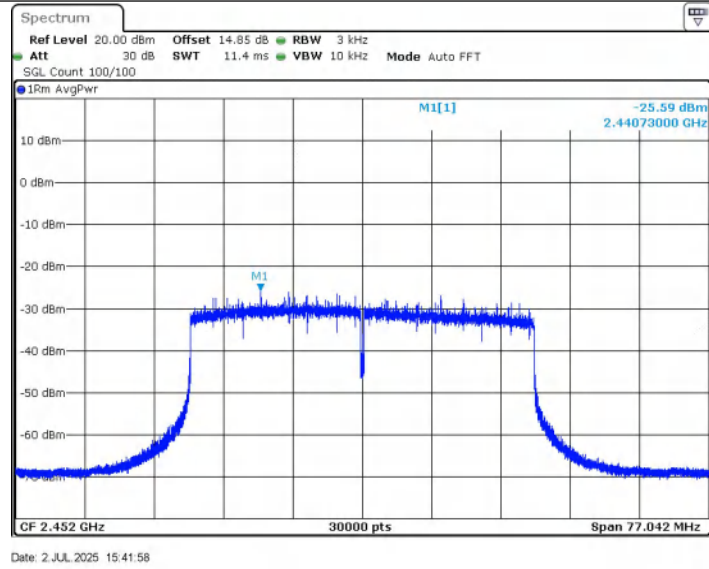
Date: 2 JUL 2025 15:39:01

11AX40SISO_Ant1_2437

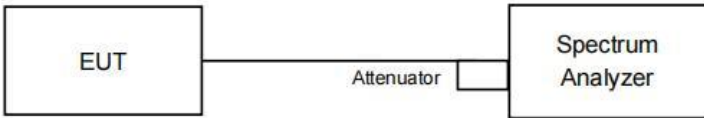


Date: 2 JUL 2025 15:40:39

11AX40SISO_Ant1_2452



5.7 Band-edge for RF Conducted Emissions

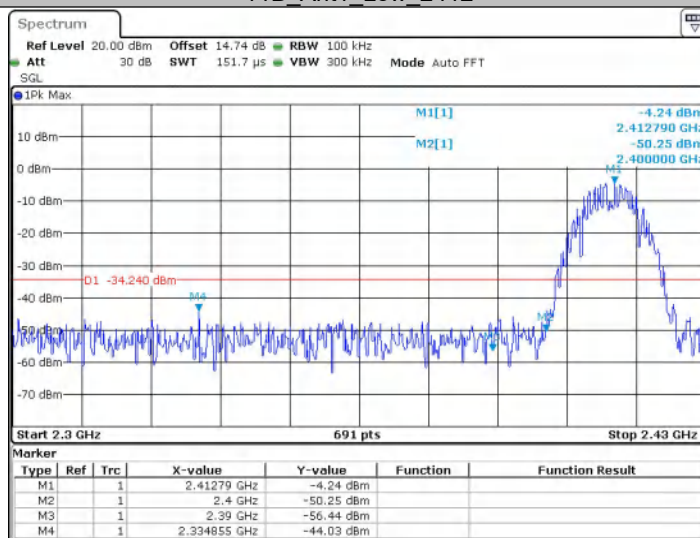
Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10: 2020
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test Results:	Pass

Test Result

TestMode	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Low	2412	-4.24	-44.03	≤ -34.24	PASS
	High	2462	-5.45	-43.9	≤ -35.45	PASS
11G	Low	2412	-6.71	-37.42	≤ -36.71	PASS
	High	2462	-5.87	-44.72	≤ -35.87	PASS
11N20SISO	Low	2412	-3.44	-35.33	≤ -33.44	PASS
	High	2462	-1.95	-42.98	≤ -31.95	PASS
11N40SISO	Low	2422	-4.08	-41.03	≤ -34.08	PASS
	High	2452	-4.48	-43.66	≤ -34.48	PASS
11AX20SISO	Low	2412	-5.77	-44	≤ -35.77	PASS
	High	2462	-8.36	-43.83	≤ -38.36	PASS
11AX40SISO	Low	2422	-10.73	-46.4	≤ -40.73	PASS
	High	2452	-11.30	-44.66	≤ -41.3	PASS

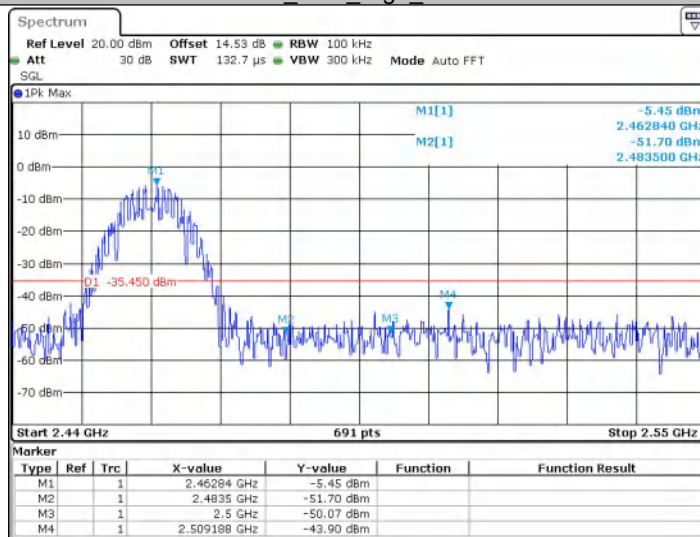
5.7.1 Test Graphs

11B_Ant1_Low_2412



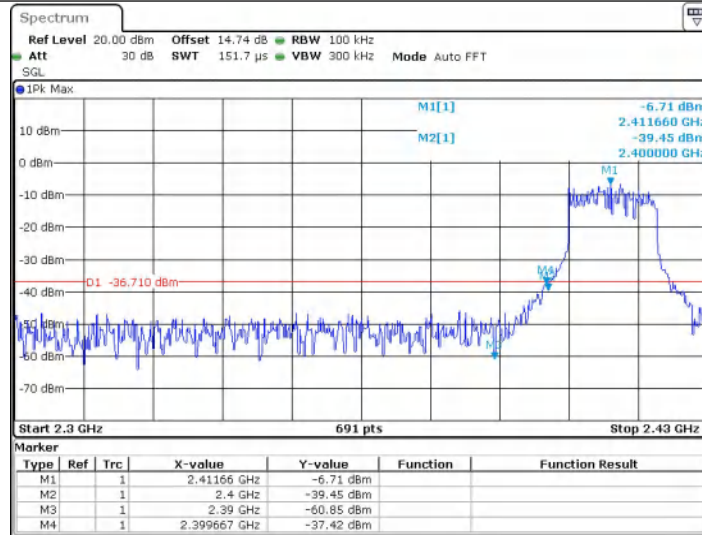
Date: 2 JUL 2025 13:12:45

11B_Ant1_High_2462



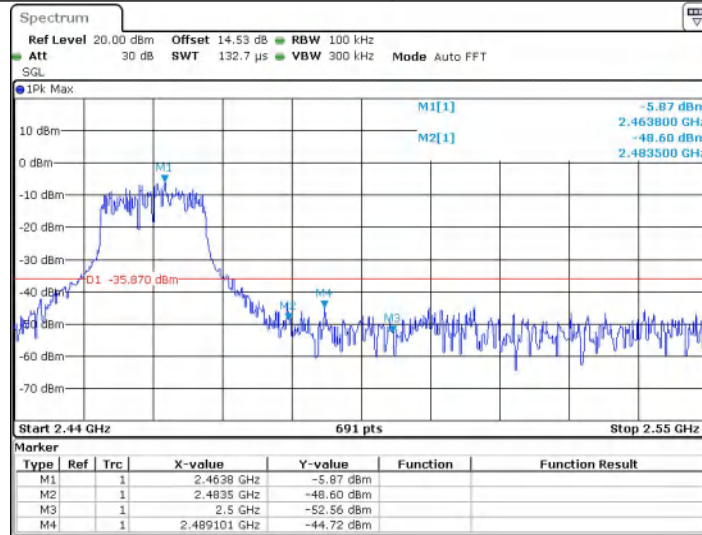
Date: 2 JUL 2025 15:06:22

11G_Ant1_Low_2412



Date: 2 JUL 2025 15:08:22

11G_Ant1_High_2462



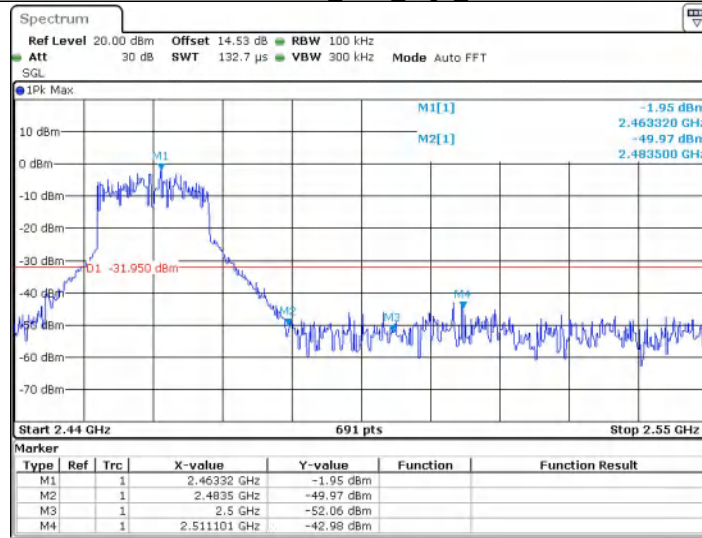
Date: 2 JUL 2025 15:11:09

11N20SISO_Ant1_Low_2412



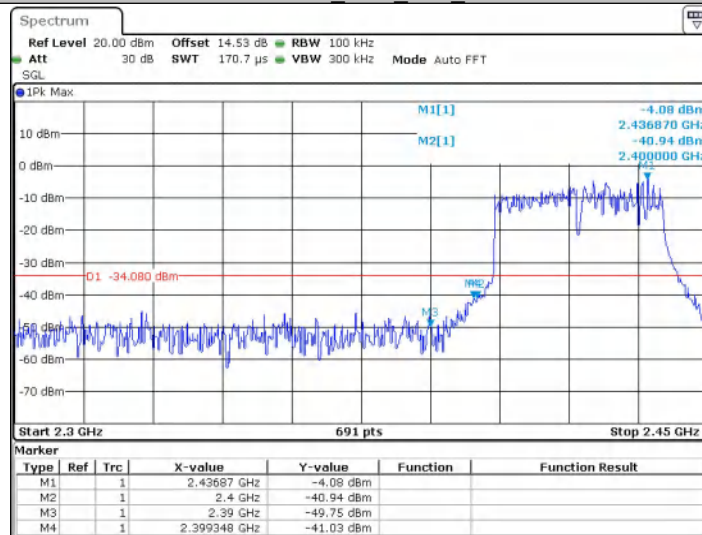
Date: 2 JUL 2025 15:12:51

11N20SISO_Ant1_High_2462



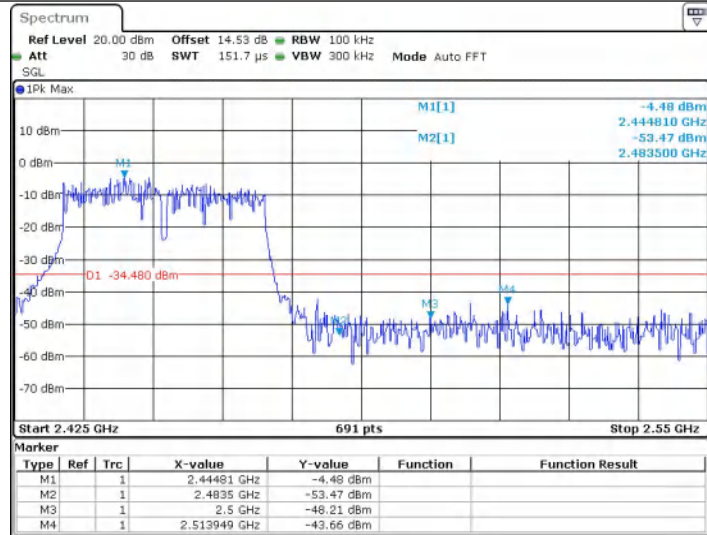
Date: 2 JUL 2025 15:17:07

11N40SISO_Ant1_Low_2422



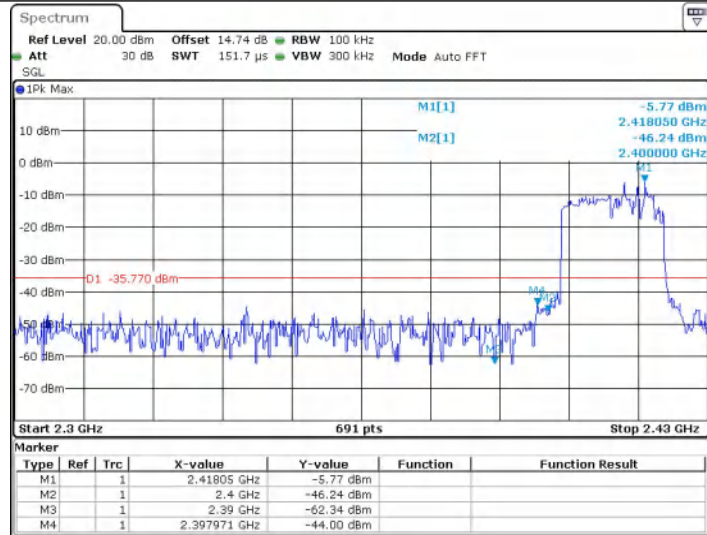
Date: 2 JUL 2025 15:19:02

11N40SISO_Ant1_High_2452



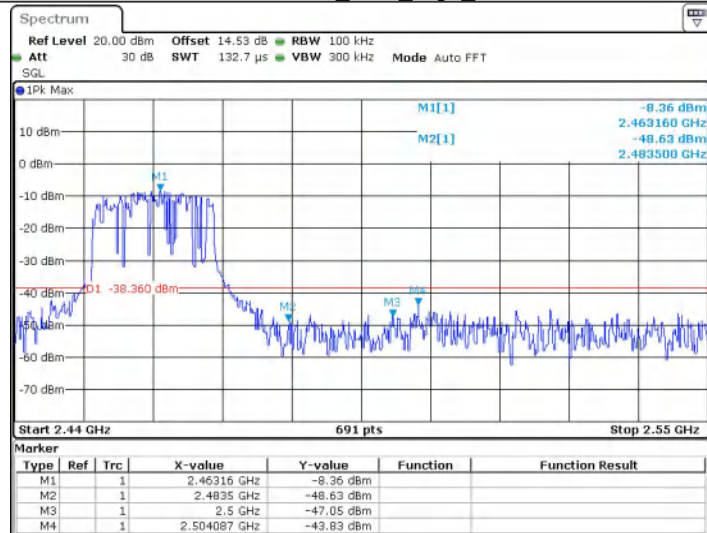
Date: 2 JUL 2025 15:22:18

11AX20SISO_Ant1_Low_2412



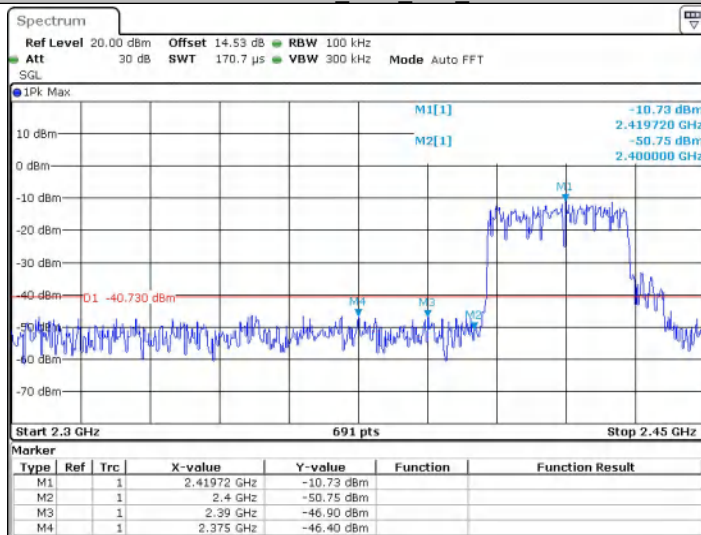
Date: 2 JUL 2025 15:24:08

11AX20SISO_Ant1_High_2462



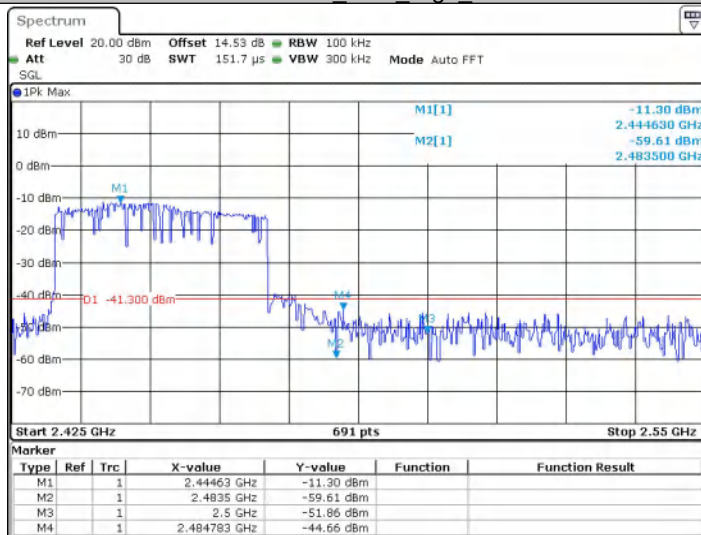
Date: 2 JUL 2025 15:36:28

11AX40SISO_Ant1_Low_2422



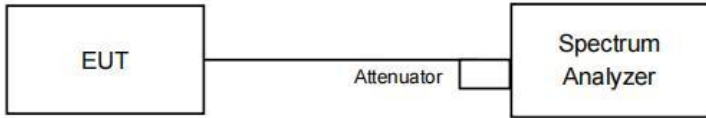
Date: 2 JUL 2025 15:39:06

11AX40SISO_Ant1_High_2452



Date: 2 JUL 2025 15:42:02

5.8 RF Conducted Spurious Emissions

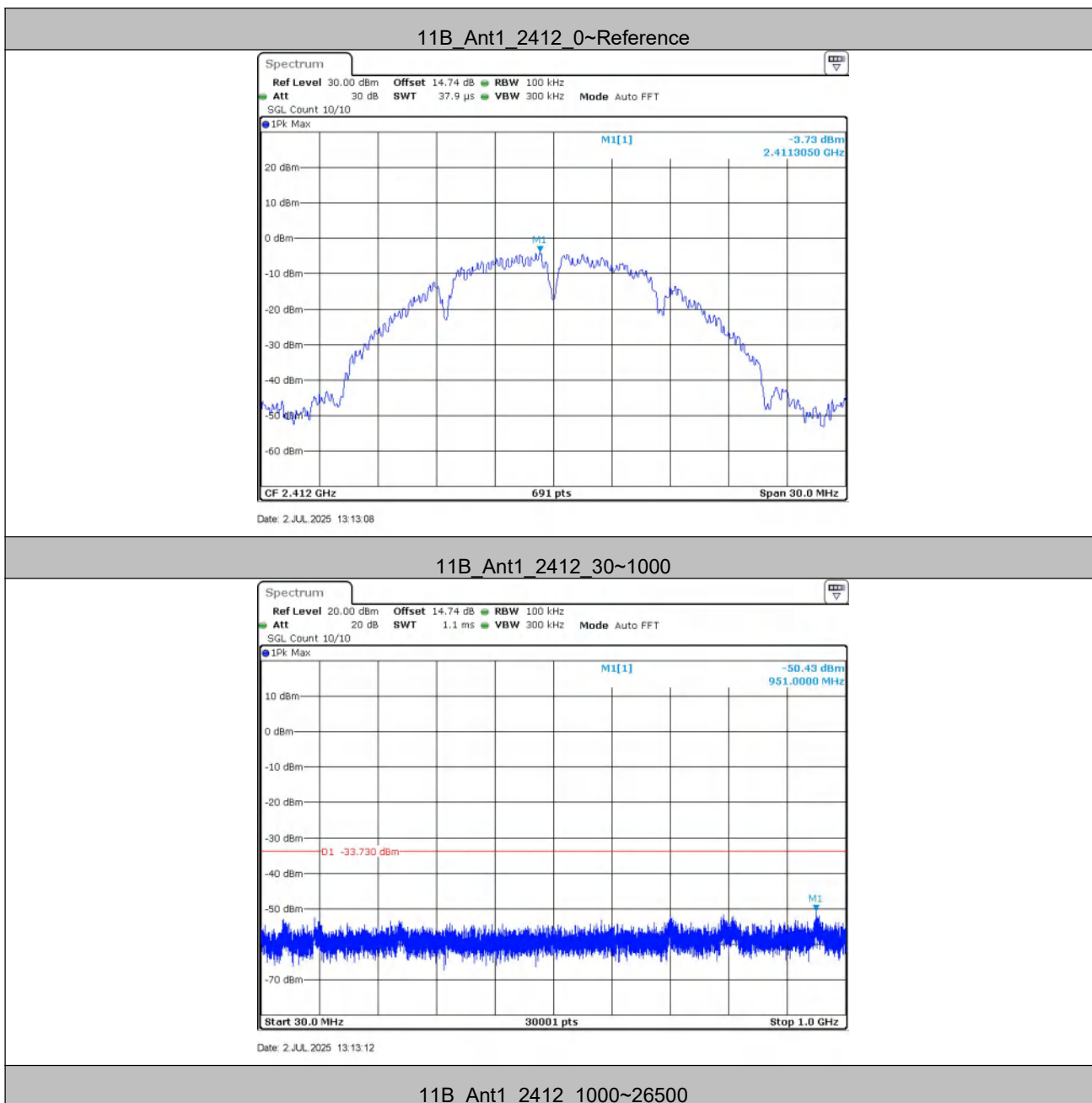
Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10: 2020
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test Results:	Pass

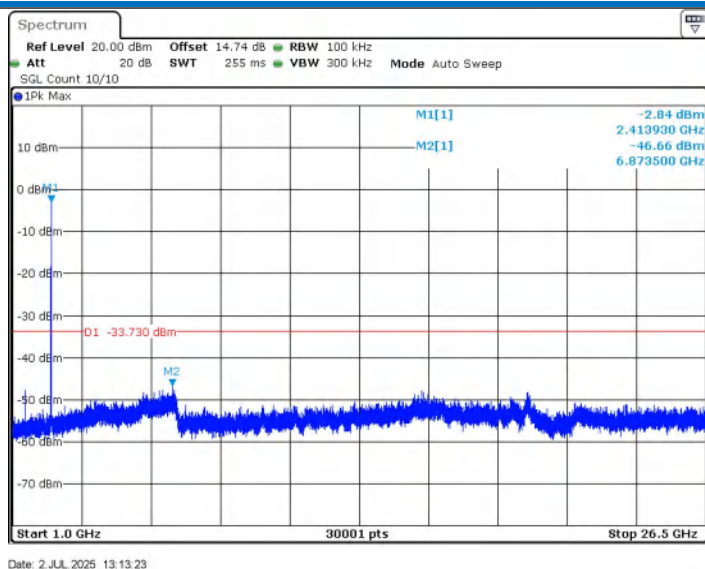
Test Result

TestMode	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	2412	Reference	-3.73	-3.73	---	PASS
		30~1000	-3.73	-50.43	≤-33.73	PASS
		1000~26500	-3.73	-46.66	≤-33.73	PASS
	2437	Reference	-2.26	-2.26	---	PASS
		30~1000	-2.26	-49.38	≤-32.26	PASS
		1000~26500	-2.26	-46.77	≤-32.26	PASS
	2462	Reference	-3.08	-3.08	---	PASS
		30~1000	-3.08	-49.18	≤-33.08	PASS
		1000~26500	-3.08	-47.54	≤-33.08	PASS
11G	2412	Reference	-5.67	-5.67	---	PASS
		30~1000	-5.67	-50.66	≤-35.67	PASS
		1000~26500	-5.67	-47.86	≤-35.67	PASS
	2437	Reference	-0.41	-0.41	---	PASS
		30~1000	-0.41	-50.03	≤-30.41	PASS
		1000~26500	-0.41	-47.88	≤-30.41	PASS
	2462	Reference	-4.98	-4.98	---	PASS
		30~1000	-4.98	-51.54	≤-34.98	PASS
		1000~26500	-4.98	-47.2	≤-34.98	PASS
11N20SISO	2412	Reference	-1.99	-1.99	---	PASS
		30~1000	-1.99	-51.31	≤-31.99	PASS
		1000~26500	-1.99	-47.31	≤-31.99	PASS
	2437	Reference	0.02	0.02	---	PASS
		30~1000	0.02	-51.43	≤-29.98	PASS
		1000~26500	0.02	-43.24	≤-29.98	PASS
	2462	Reference	-2.05	-2.05	---	PASS
		30~1000	-2.05	-50.94	≤-32.05	PASS
		1000~26500	-2.05	-41.44	≤-32.05	PASS
11N40SISO	2422	Reference	-1.11	-1.11	---	PASS
		30~1000	-1.11	-51.09	≤-31.11	PASS
		1000~26500	-1.11	-47.59	≤-31.11	PASS
	2437	Reference	-3.60	-3.60	---	PASS
		30~1000	-3.60	-51.71	≤-33.6	PASS
		1000~26500	-3.60	-47.61	≤-33.6	PASS
	2452	Reference	-1.92	-1.92	---	PASS

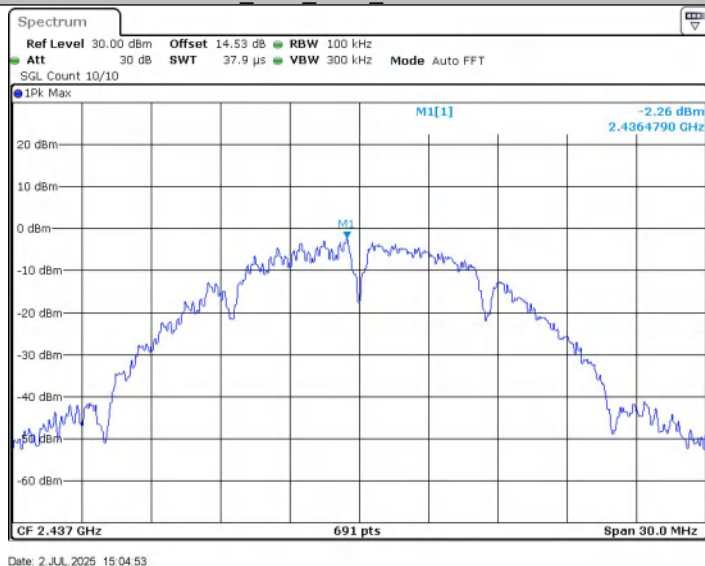
		30~1000	-1.92	-51.44	≤ -31.92	PASS
		1000~26500	-1.92	-46.16	≤ -31.92	PASS
11AX20SISO	2412	Reference	-6.42	-6.42	---	PASS
		30~1000	-6.42	-50.63	≤ -36.42	PASS
		1000~26500	-6.42	-47.45	≤ -36.42	PASS
	2437	Reference	-3.38	-3.38	---	PASS
		30~1000	-3.38	-50.54	≤ -33.38	PASS
		1000~26500	-3.38	-46.51	≤ -33.38	PASS
	2462	Reference	-5.69	-5.69	---	PASS
		30~1000	-5.69	-50.64	≤ -35.69	PASS
		1000~26500	-5.69	-48.17	≤ -35.69	PASS
11AX40SISO	2422	Reference	-8.96	-8.96	---	PASS
		30~1000	-8.96	-51.11	≤ -38.96	PASS
		1000~26500	-8.96	-47.37	≤ -38.96	PASS
	2437	Reference	-7.47	-7.47	---	PASS
		30~1000	-7.47	-51.61	≤ -37.47	PASS
		1000~26500	-7.47	-47.64	≤ -37.47	PASS
	2452	Reference	-7.74	-7.74	---	PASS
		30~1000	-7.74	-51.28	≤ -37.74	PASS
		1000~26500	-7.74	-47.06	≤ -37.74	PASS

Test Graphs

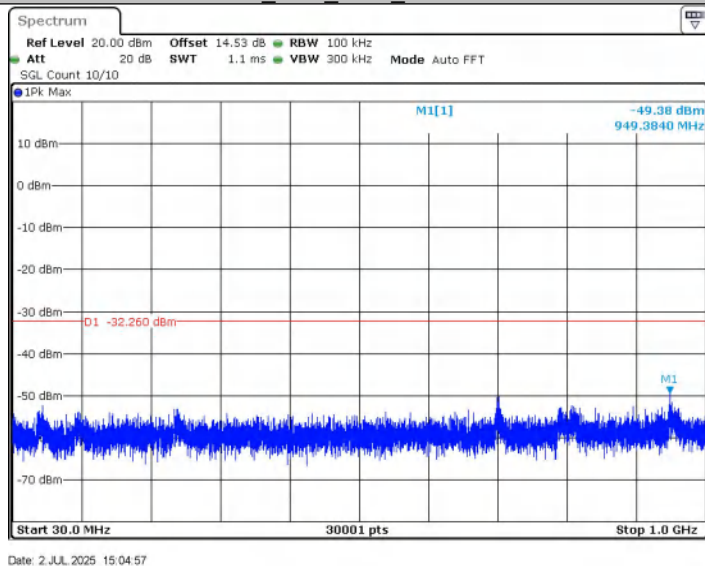




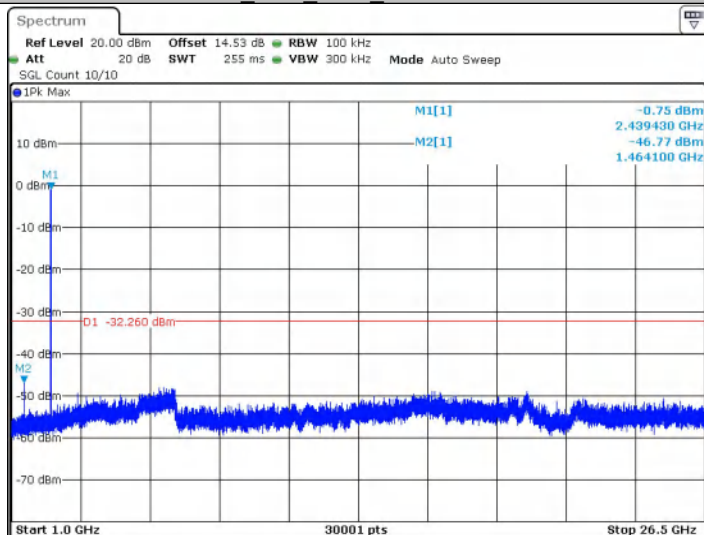
11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000

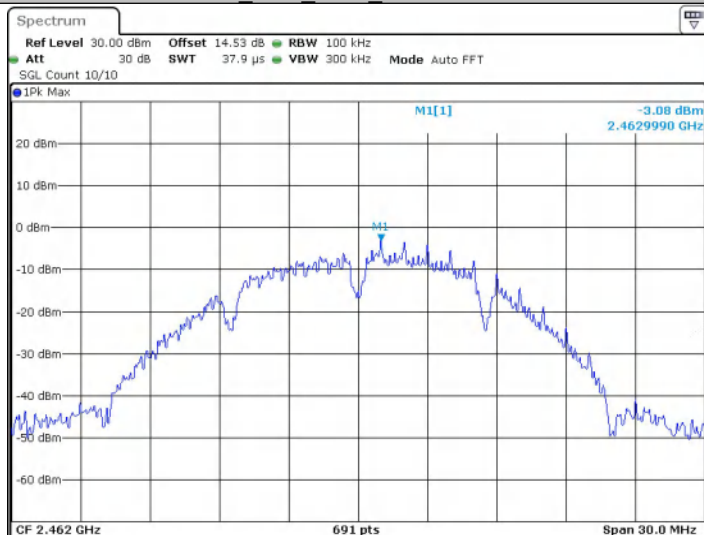


11B_Ant1_2437_1000~26500



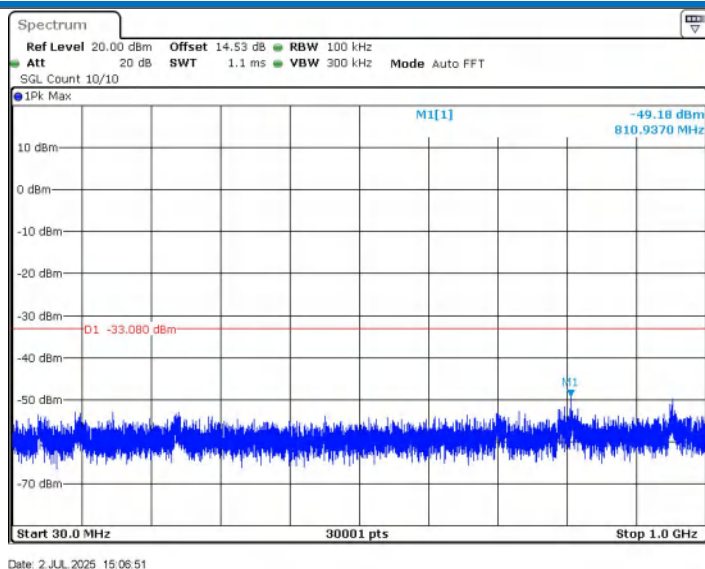
Date: 2 JUL 2025 15:05:08

11B_Ant1_2462_0~Reference

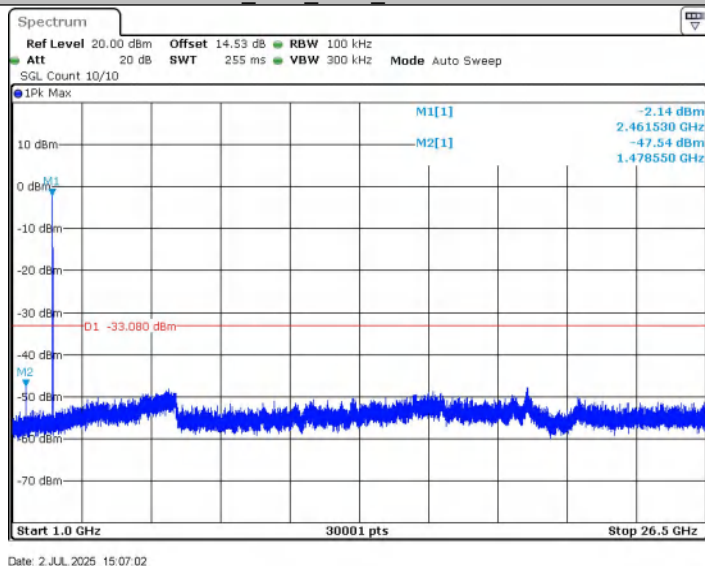


Date: 2 JUL 2025 15:06:47

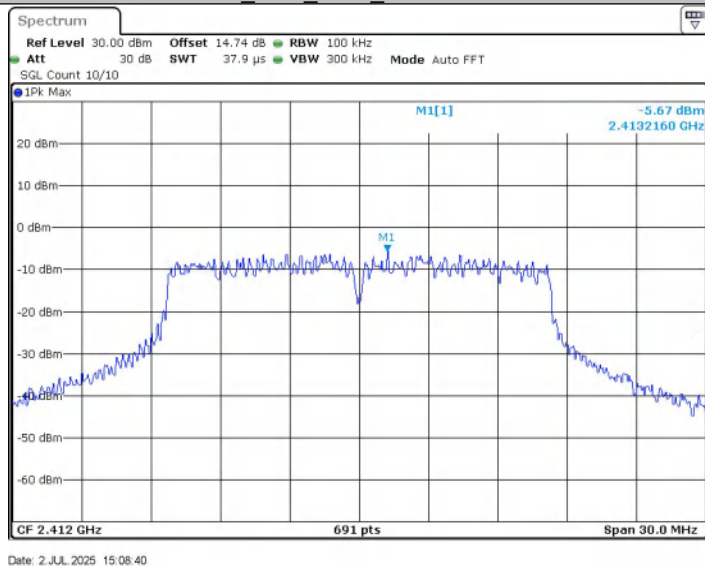
11B_Ant1_2462_30~1000



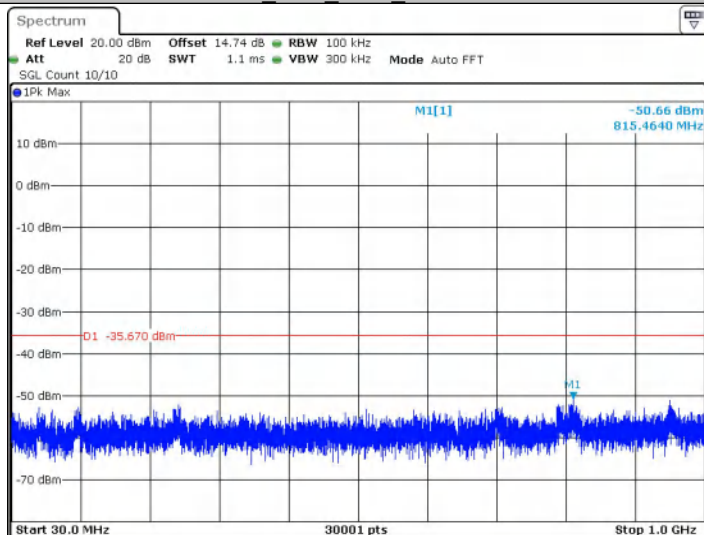
11B_Ant1_2462_1000~26500



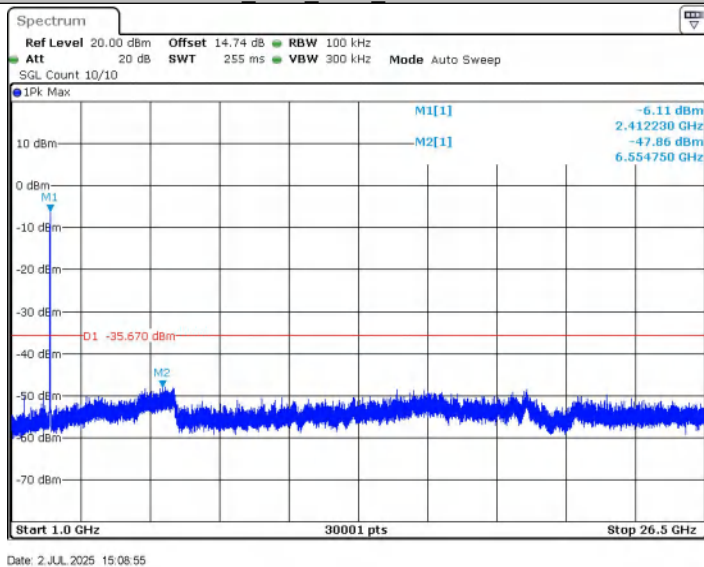
11G_Ant1_2412_0~Reference



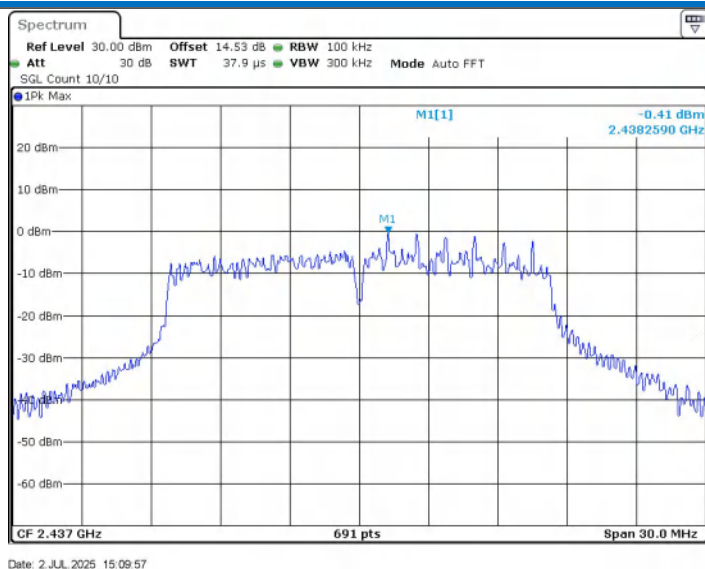
11G_Ant1_2412_30~1000



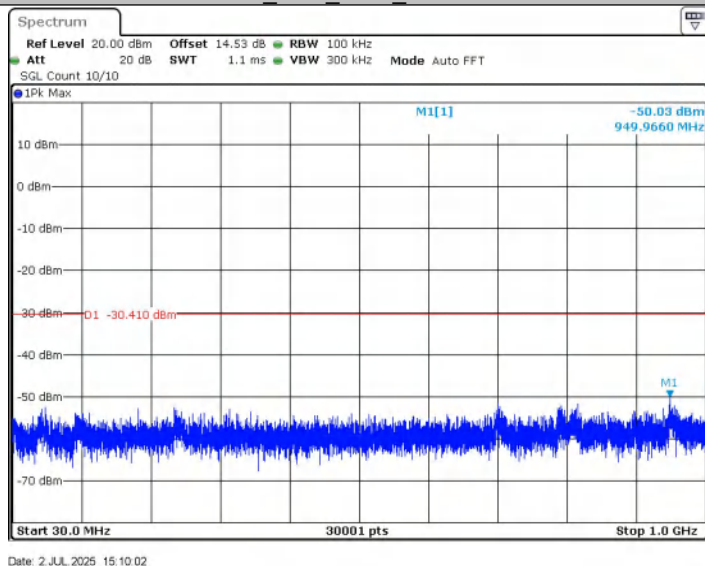
11G_Ant1_2412_1000~26500



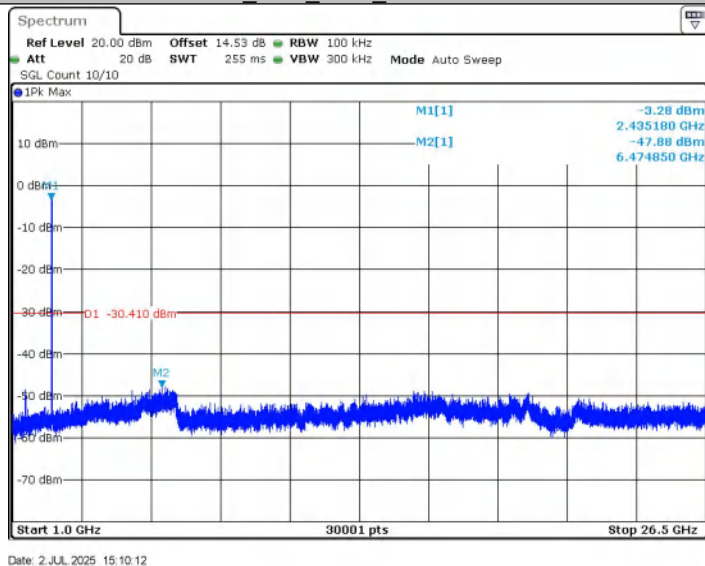
11G_Ant1_2437_0~Reference



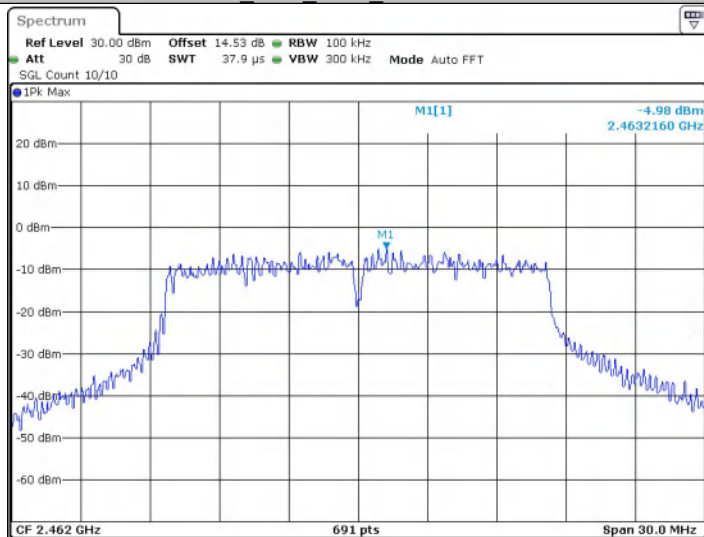
11G_Ant1_2437_30~1000



11G_Ant1_2437_1000~26500

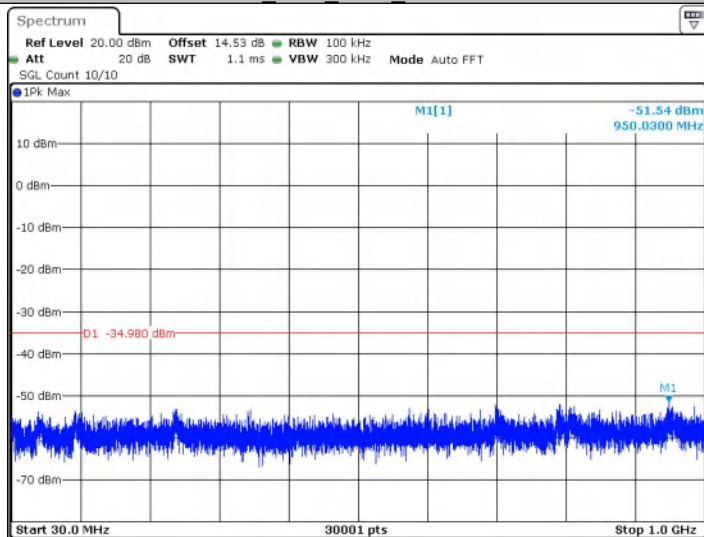


11G_Ant1_2462_0~Reference



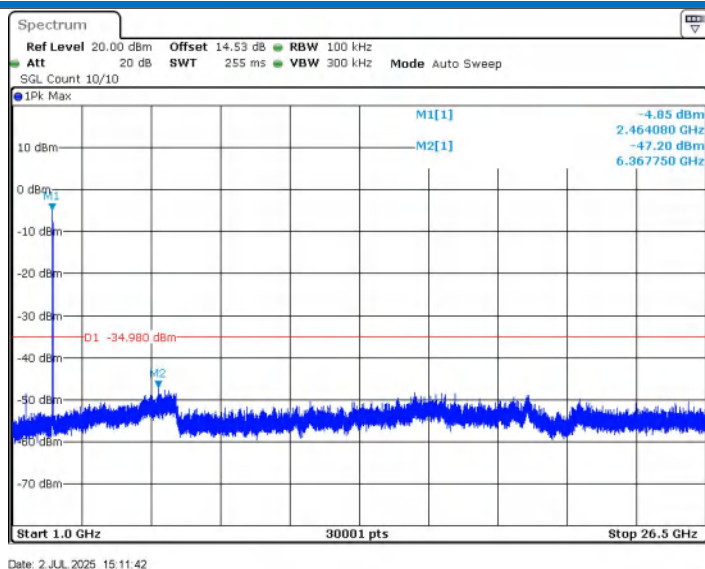
Date: 2 JUL 2025 15:11:26

11G_Ant1_2462_30~1000

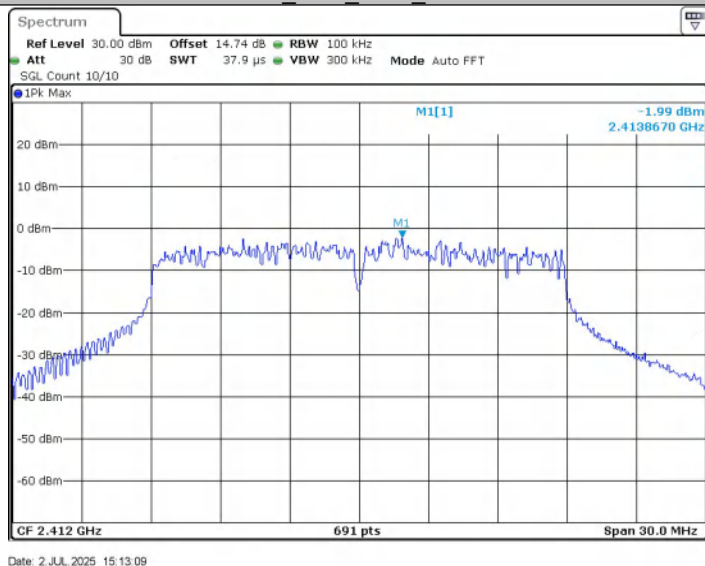


Date: 2 JUL 2025 15:11:31

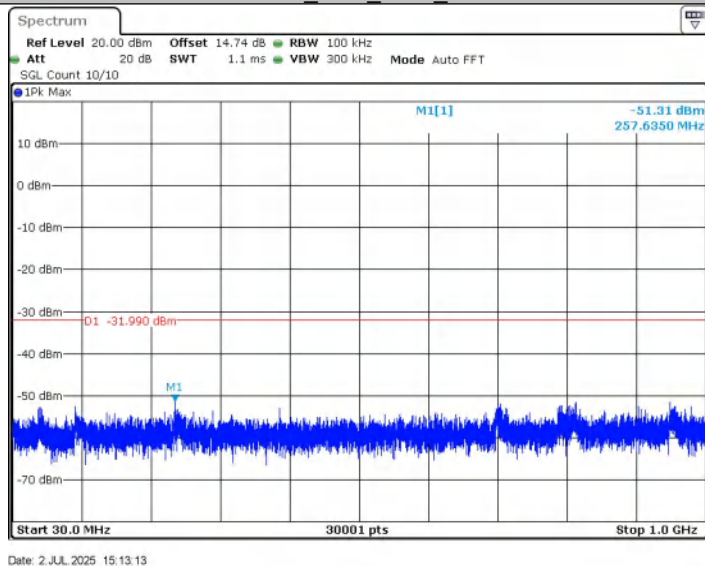
11G_Ant1_2462_1000~26500



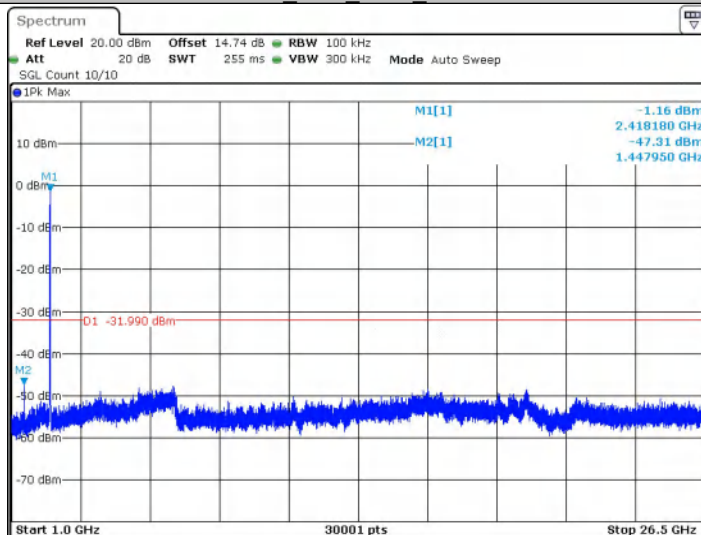
11N20SISO_Ant1_2412_0~Reference



11N20SISO_Ant1_2412_30~1000

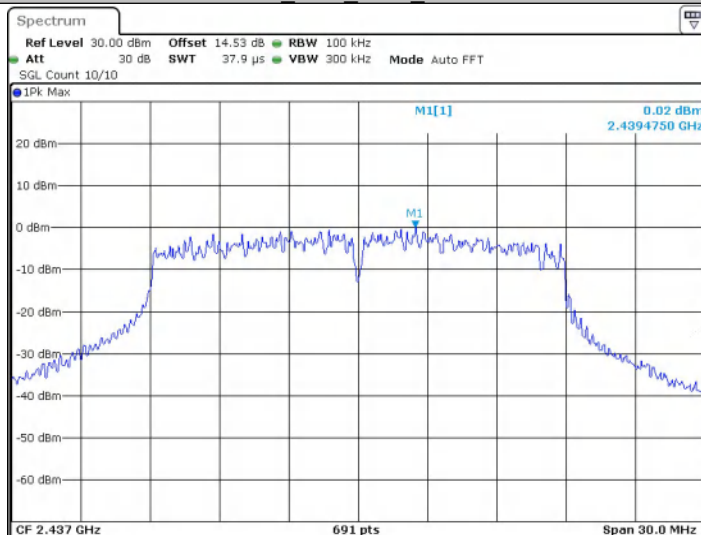


11N20SISO_Ant1_2412_1000~26500



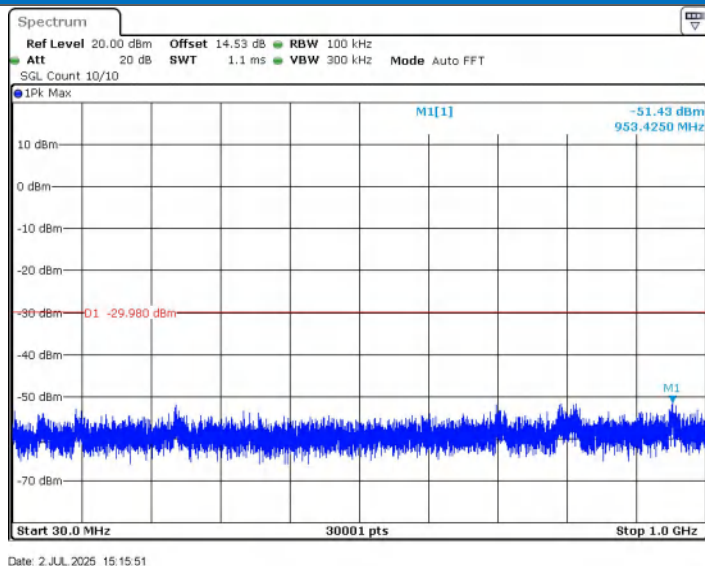
Date: 2 JUL 2025 15:13:24

11N20SISO_Ant1_2437_0~Reference

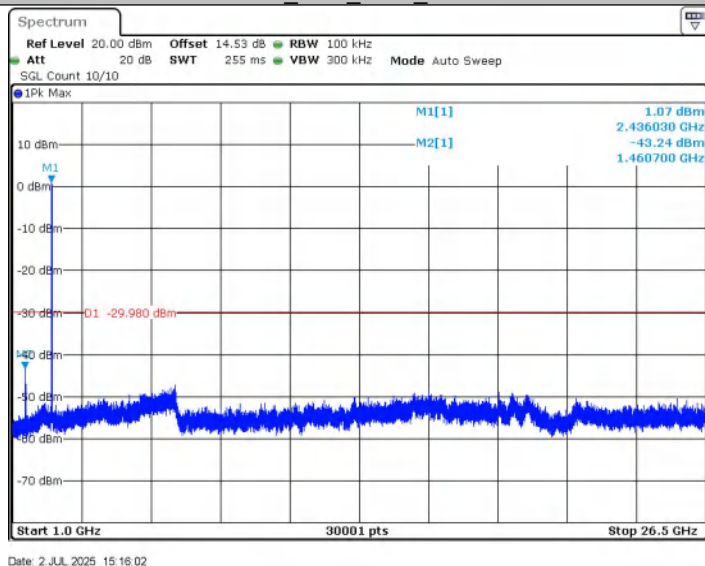


Date: 2 JUL 2025 15:15:47

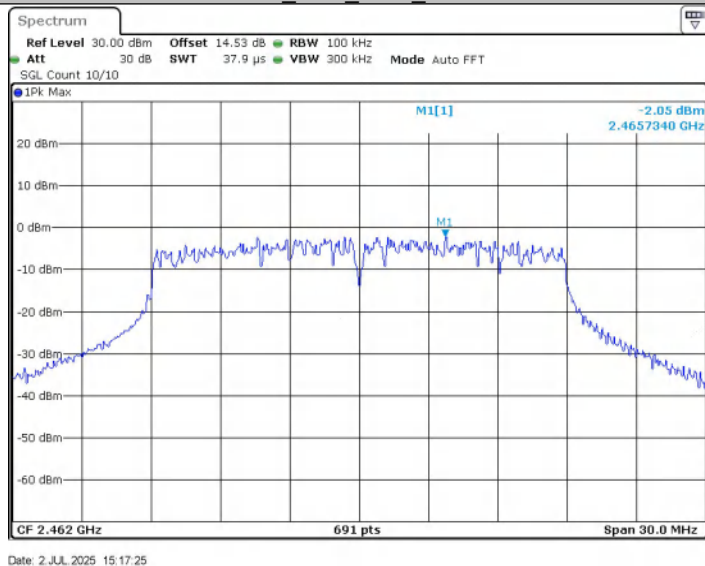
11N20SISO_Ant1_2437_30~1000



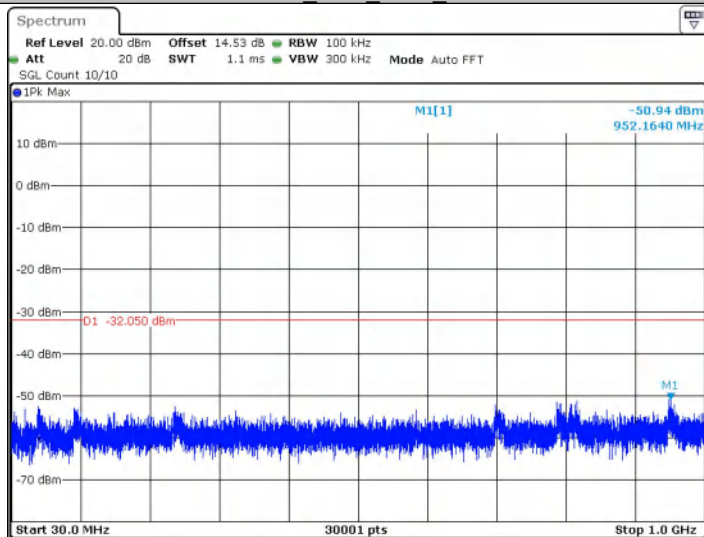
11N20SISO_Ant1_2437_1000~26500



11N20SISO_Ant1_2462_0~Reference

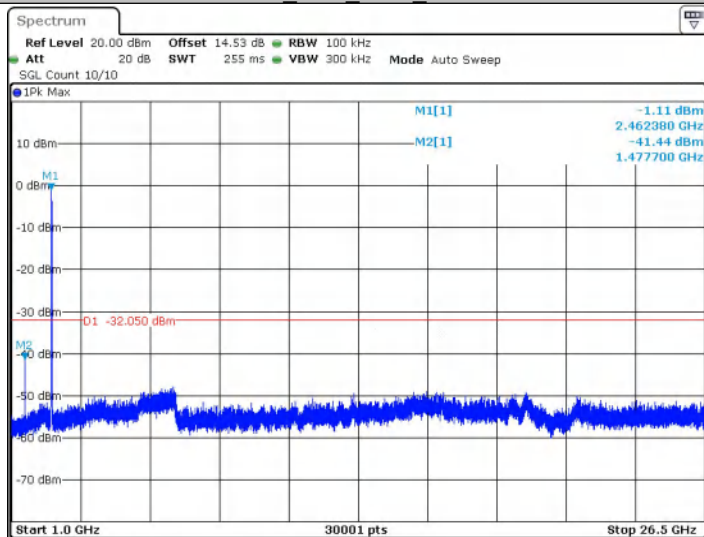


11N20SISO_Ant1_2462_30~1000



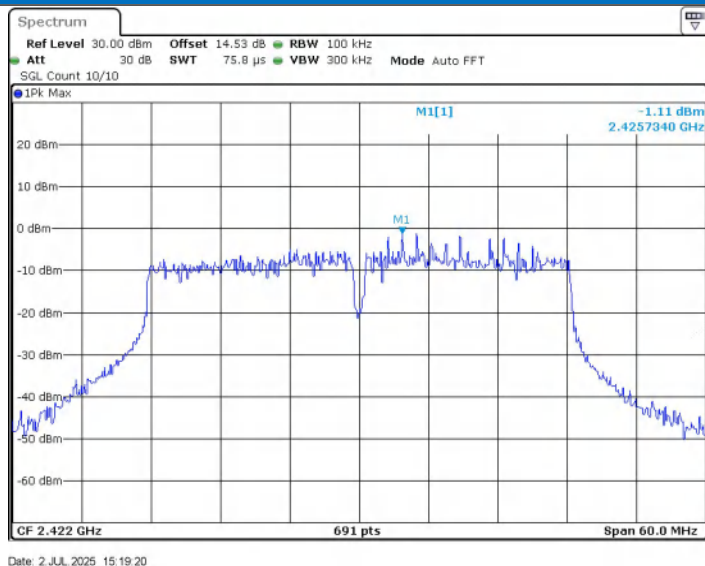
Date: 2 JUL 2025 15:17:29

11N20SISO_Ant1_2462_1000~26500

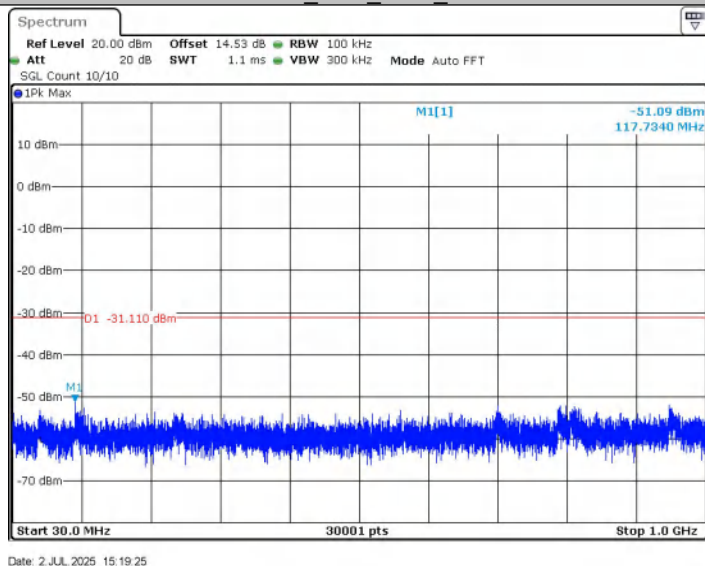


Date: 2 JUL 2025 15:17:40

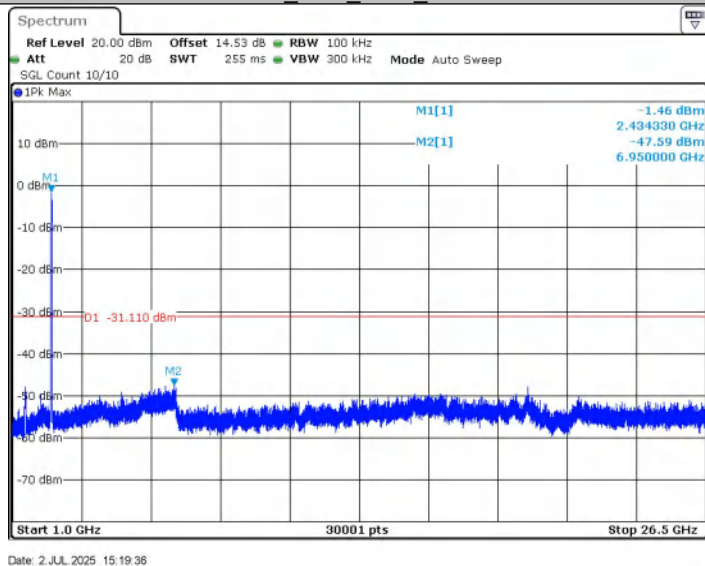
11N40SISO_Ant1_2422_0~Reference



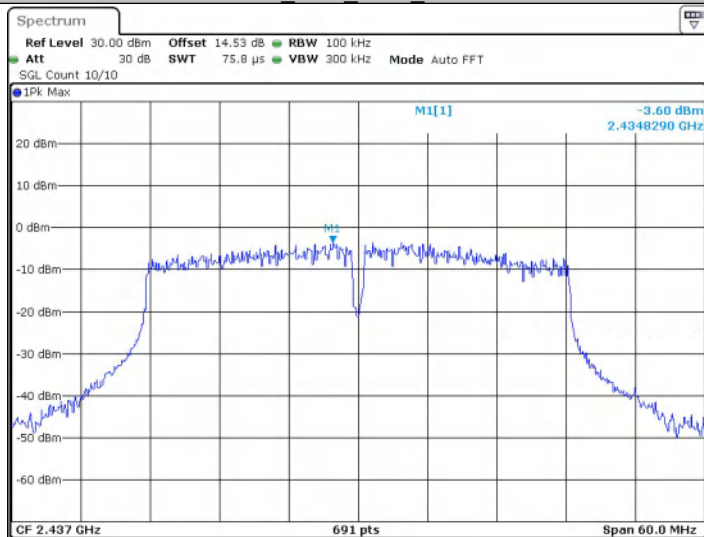
11N40SISO_Ant1_2422_30~1000



11N40SISO_Ant1_2422_1000~26500

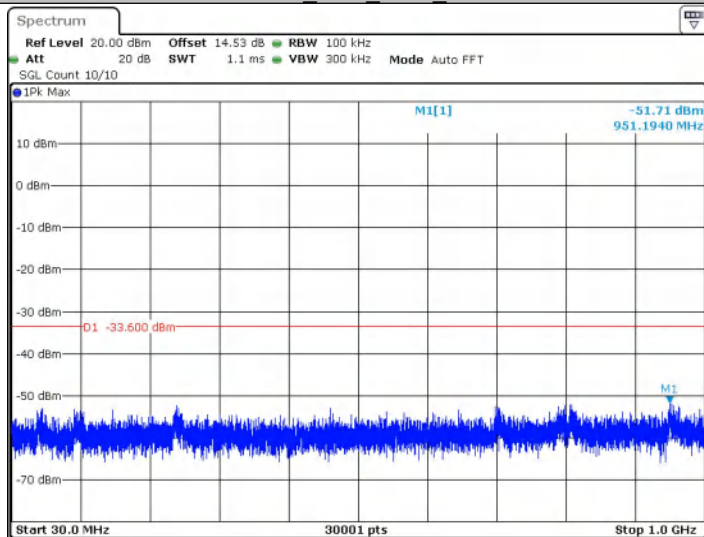


11N40SISO_Ant1_2437_0~Reference



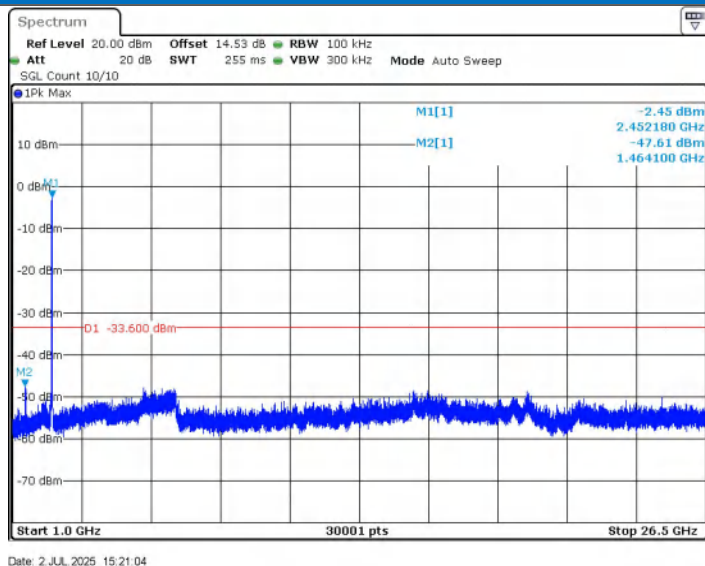
Date: 2 JUL 2025 15:20:49

11N40SISO_Ant1_2437_30~1000

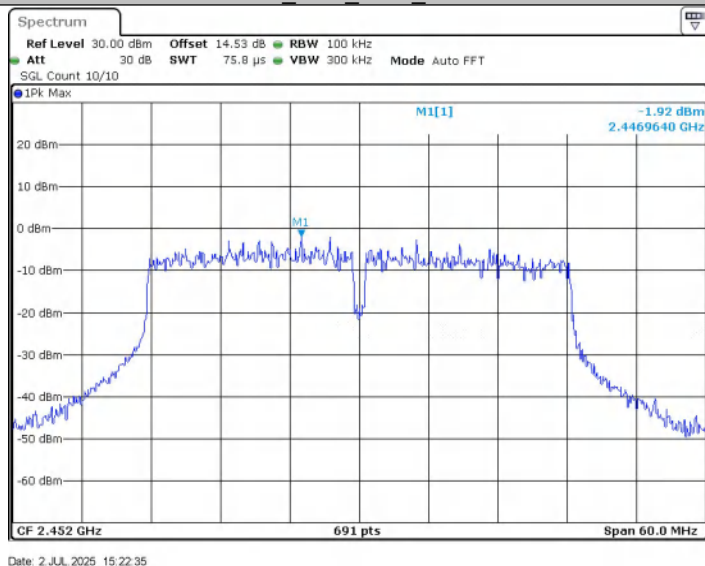


Date: 2 JUL 2025 15:20:53

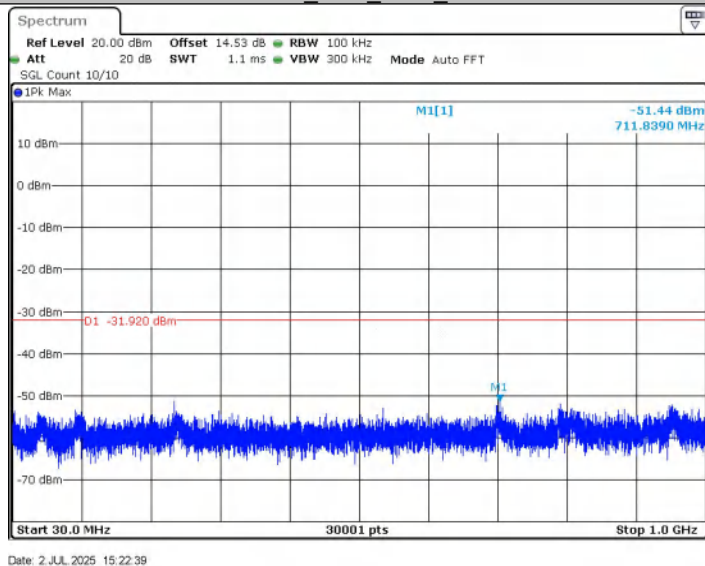
11N40SISO_Ant1_2437_1000~26500



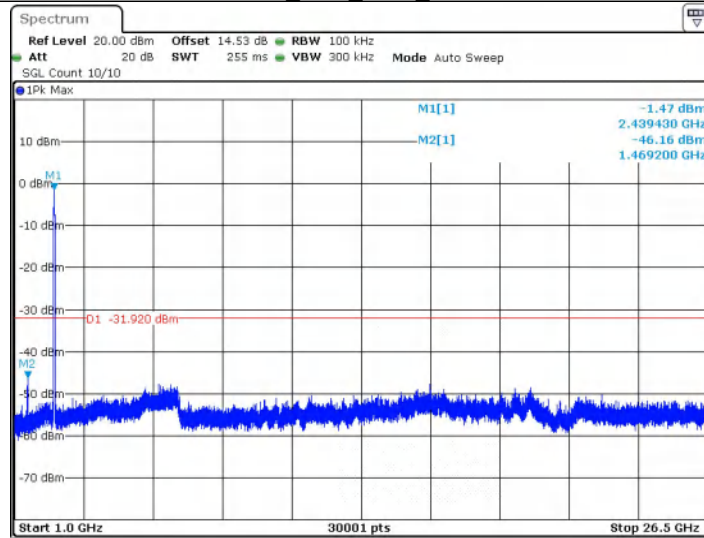
11N40SISO_Ant1_2452_0~Reference



11N40SISO_Ant1_2452_30~1000

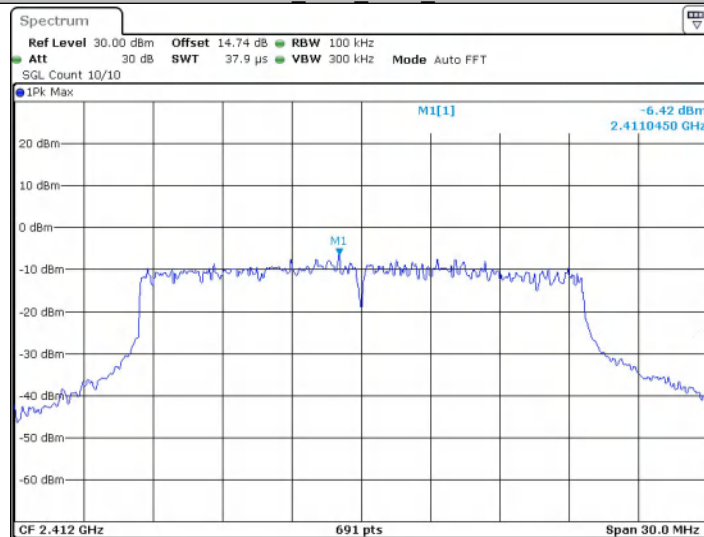


11N40SISO_Ant1_2452_1000~26500



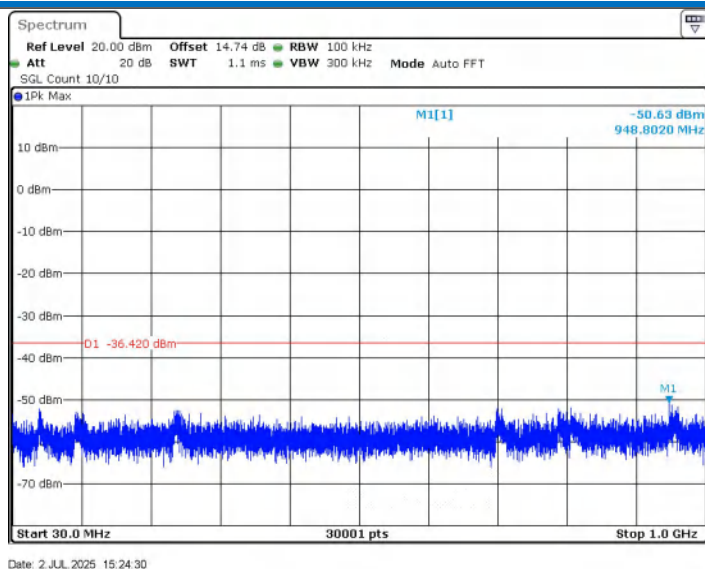
Date: 2 JUL 2025 15:22:50

11AX20SISO_Ant1_2412_0~Reference

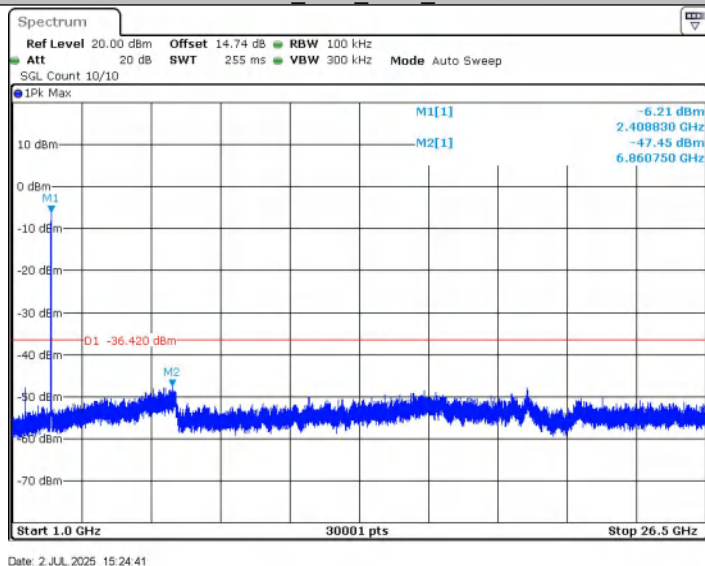


Date: 2 JUL 2025 15:24:26

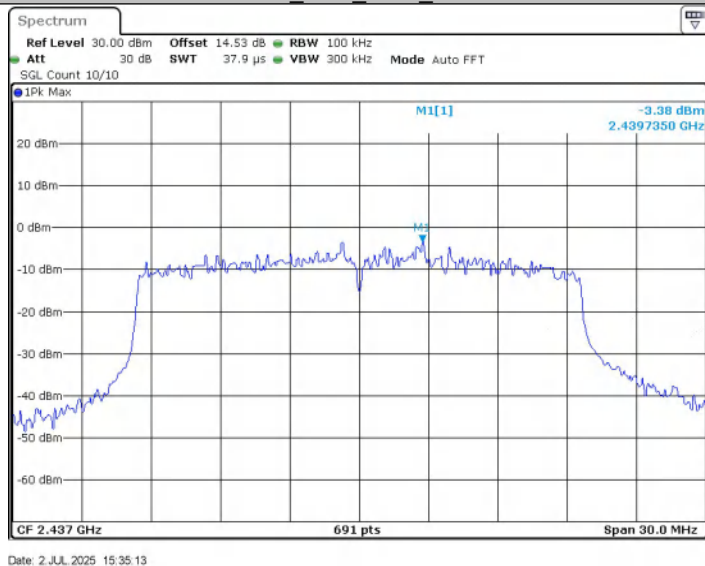
11AX20SISO_Ant1_2412_30~1000



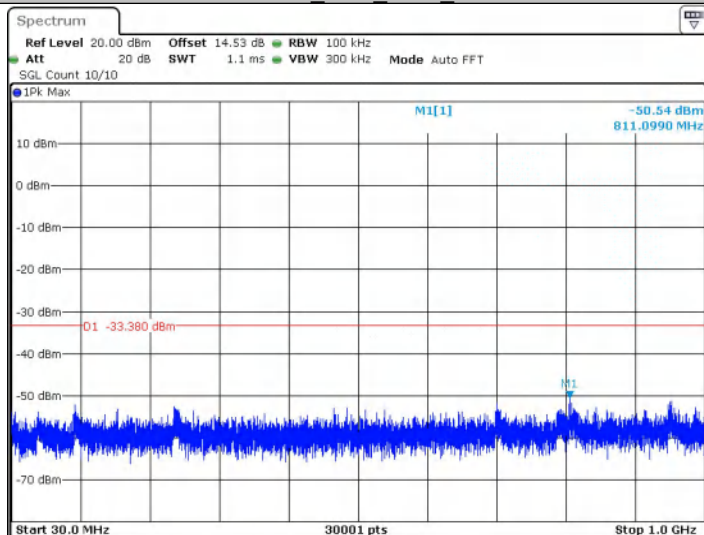
11AX20SISO_Ant1_2412_1000~26500



11AX20SISO_Ant1_2437_0~Reference

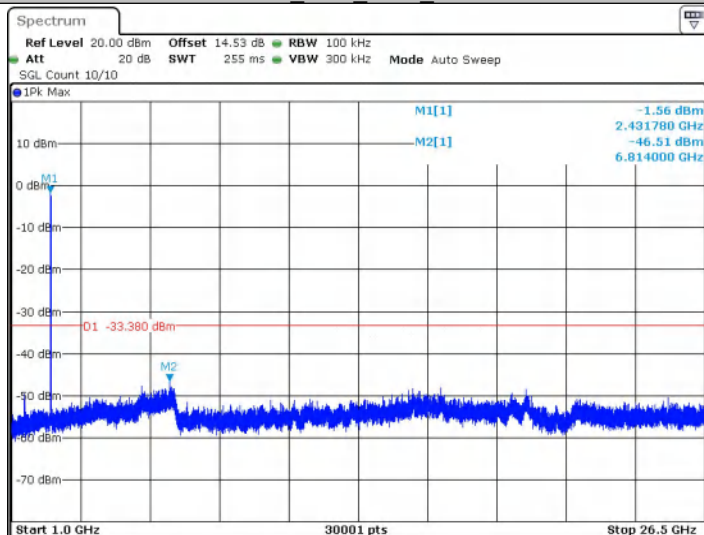


11AX20SISO_Ant1_2437_30~1000



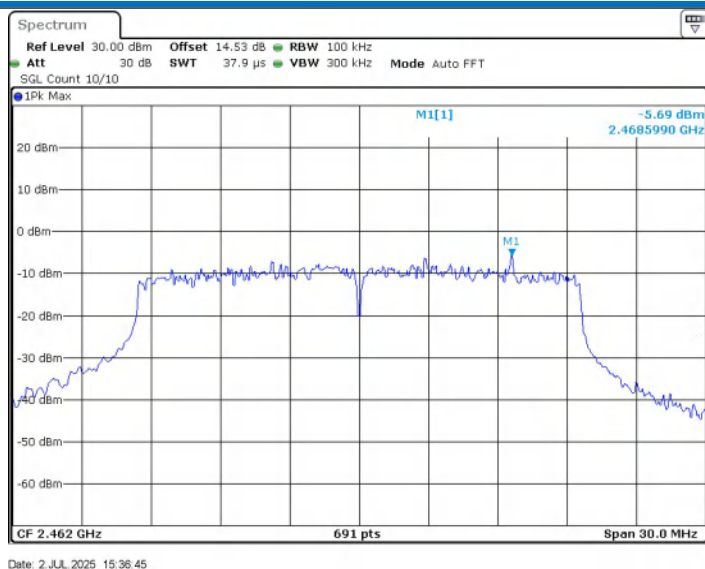
Date: 2 JUL 2025 15:35:17

11AX20SISO_Ant1_2437_1000~26500

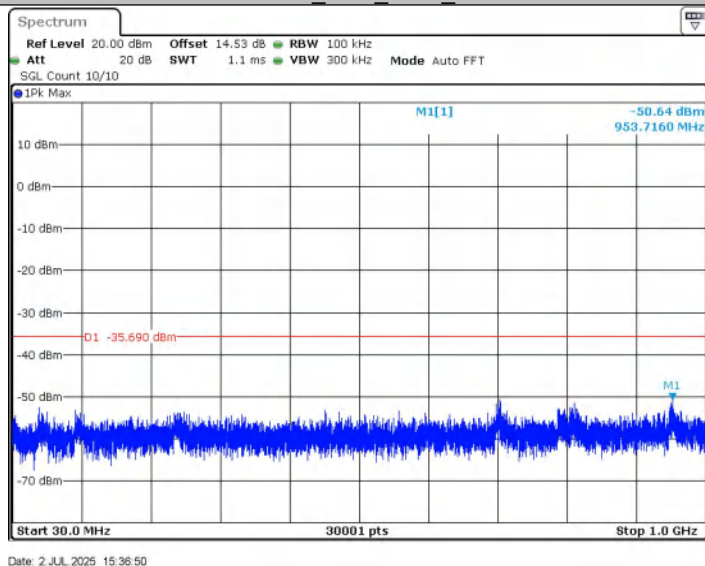


Date: 2 JUL 2025 15:35:28

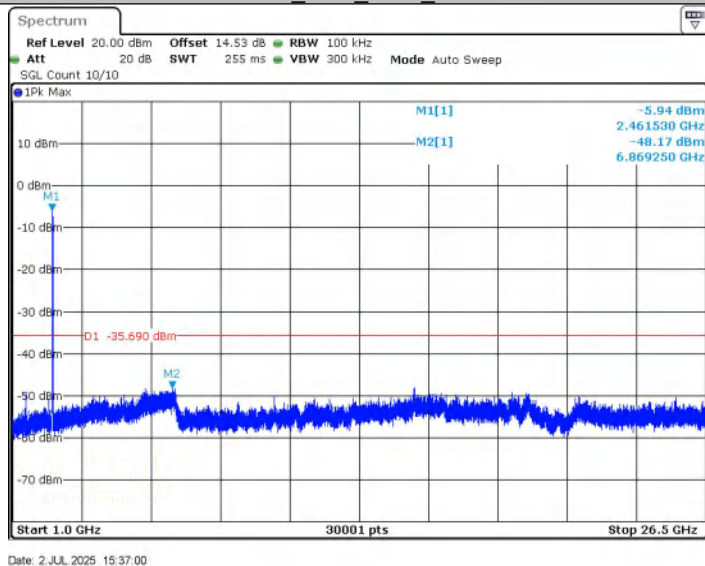
11AX20SISO_Ant1_2462_0~Reference



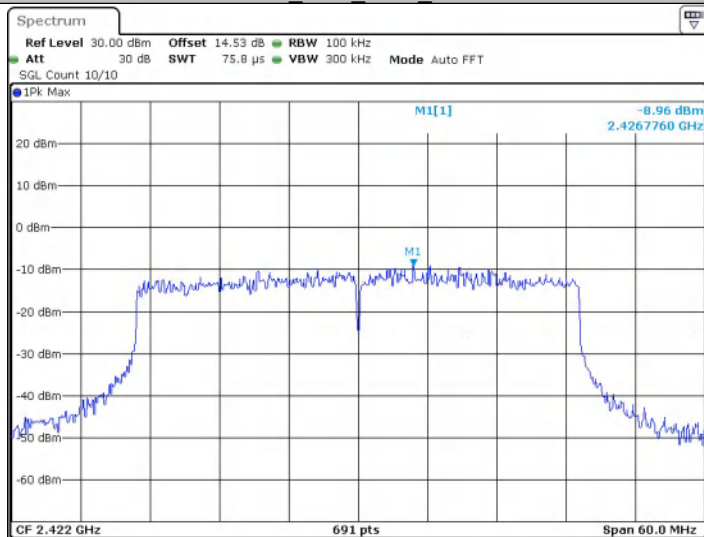
11AX20SISO_Ant1_2462_30~1000



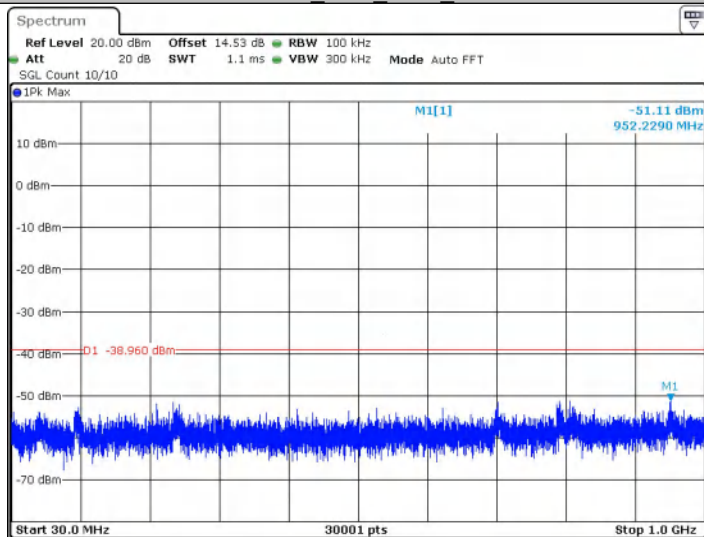
11AX20SISO_Ant1_2462_1000~26500



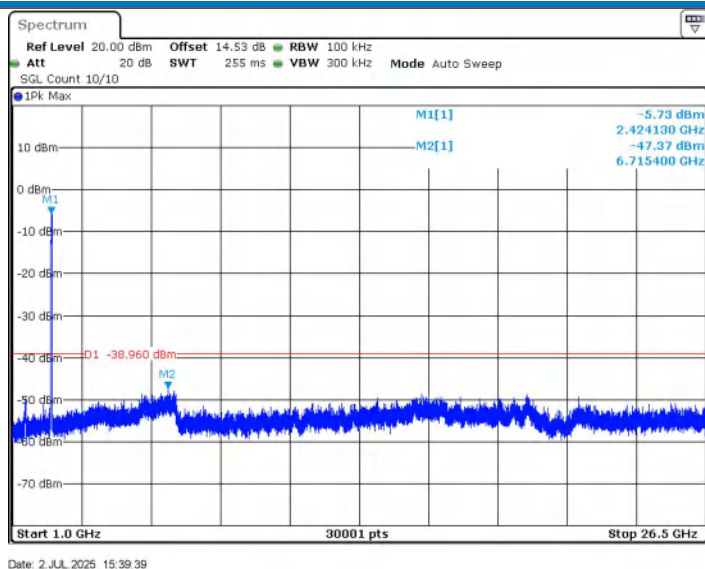
11AX40SISO_Ant1_2422_0~Reference



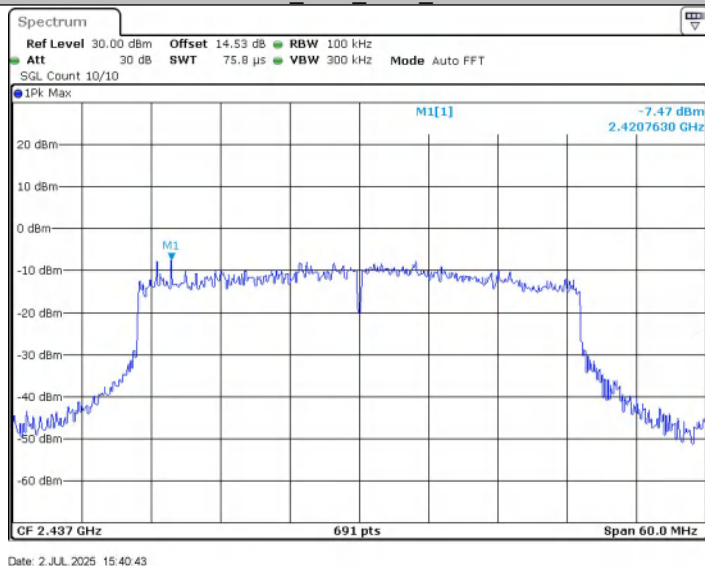
11AX40SISO_Ant1_2422_30~1000



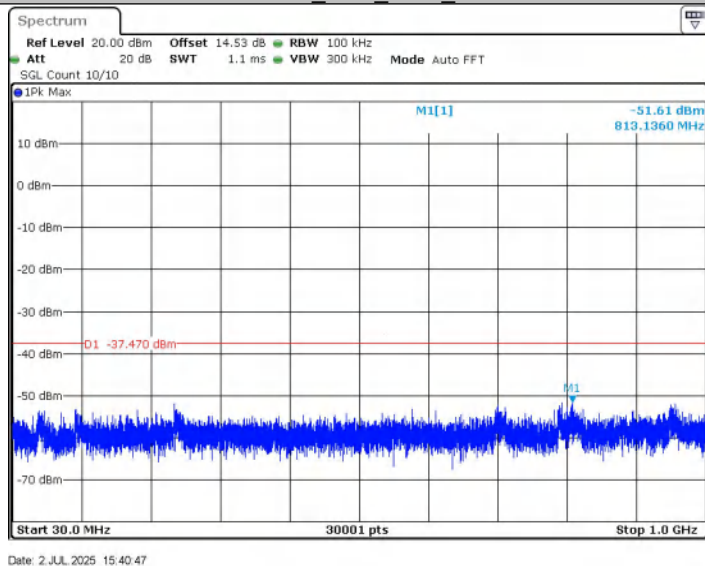
11AX40SISO_Ant1_2422_1000~26500



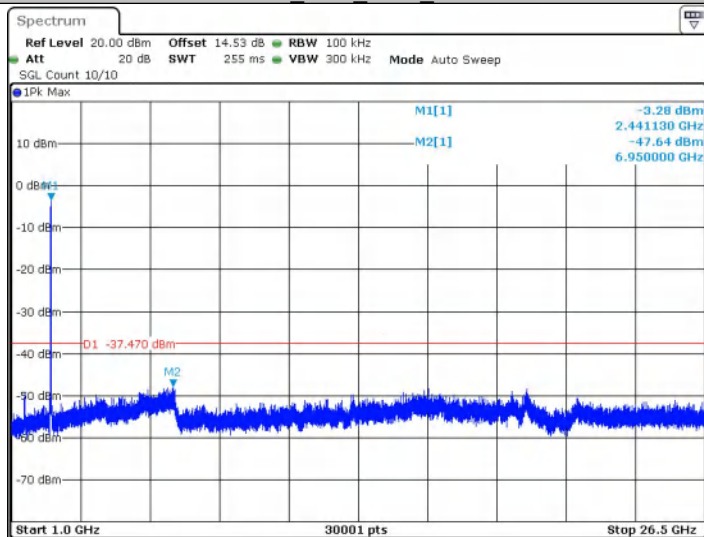
11AX40SISO_Ant1_2437_0~Reference



11AX40SISO_Ant1_2437_30~1000

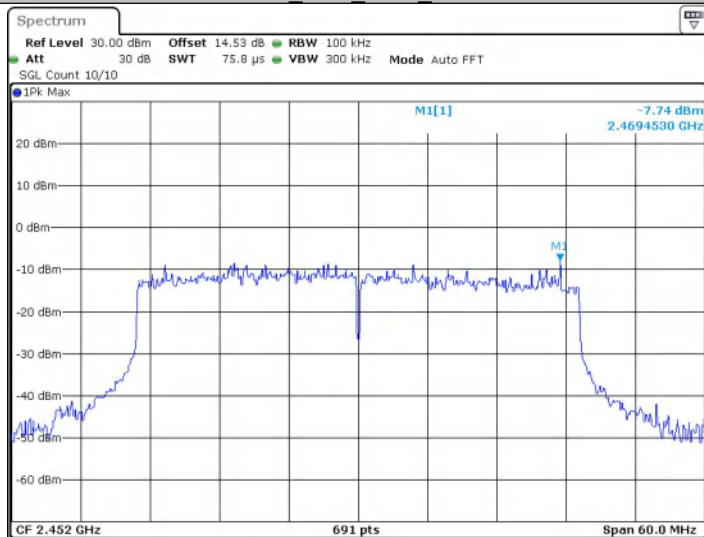


11AX40SISO_Ant1_2437_1000~26500



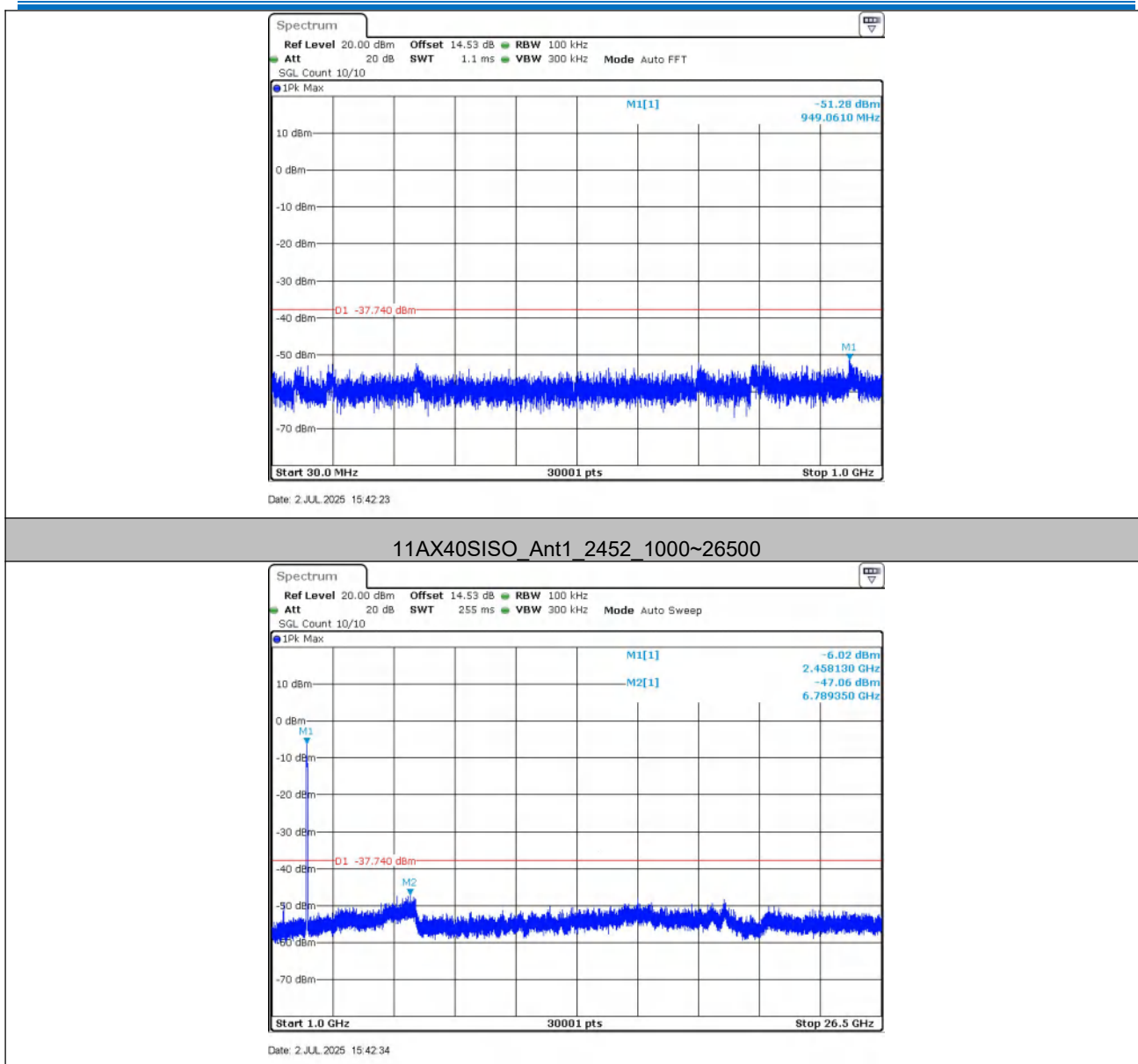
Date: 2 JUL 2025 15:40:58

11AX40SISO_Ant1_2452_0~Reference



Date: 2 JUL 2025 15:42:19

11AX40SISO_Ant1_2452_30~1000



Remark:

Pretest 9kHz to 25GHz, find the highest point when testing, so only the worst data were shown in the test report. Per FCC Part 15.33 (a) and 15.31 (o) ,The amplitude of spurious emissions from intentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this part.

5.9 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205				
Test Method:	ANSI C63.10 2020				
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	100 kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3
	Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.				

Test Setup:

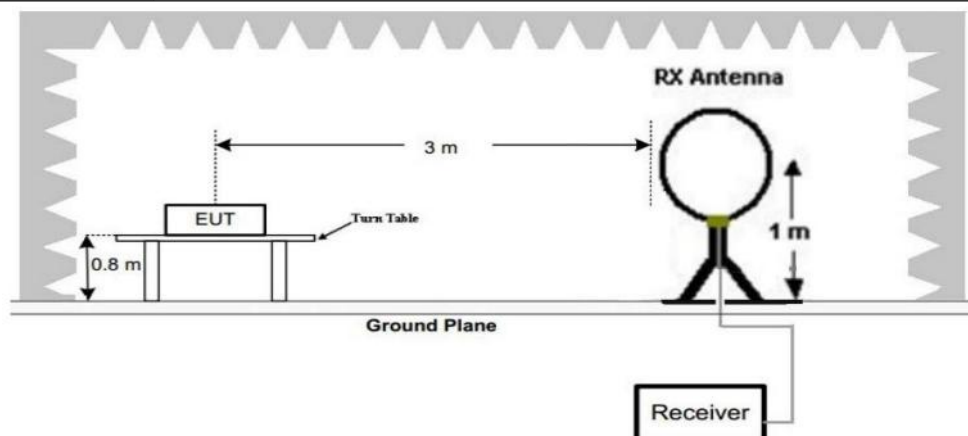


Figure 1. Below 30MHz

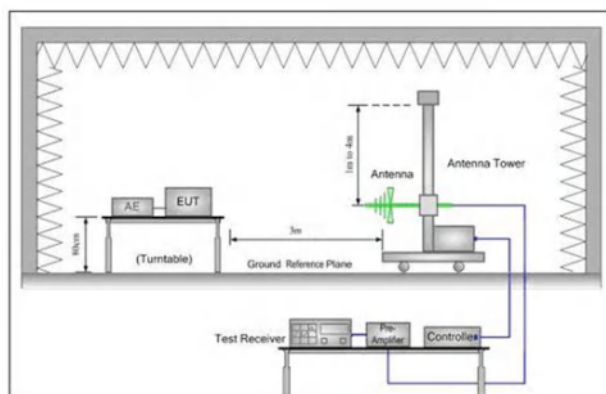


Figure 2. 30MHz to 1GHz

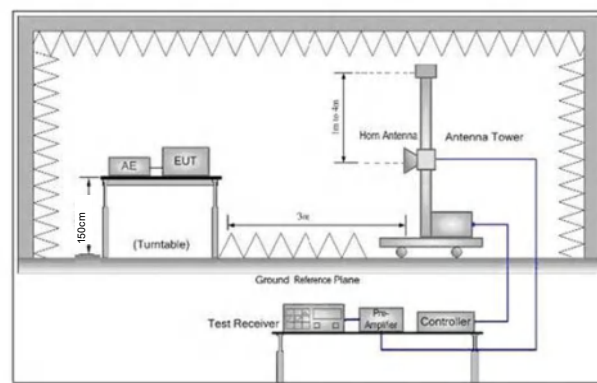


Figure 3. Above 1 GHz

Test Procedure:

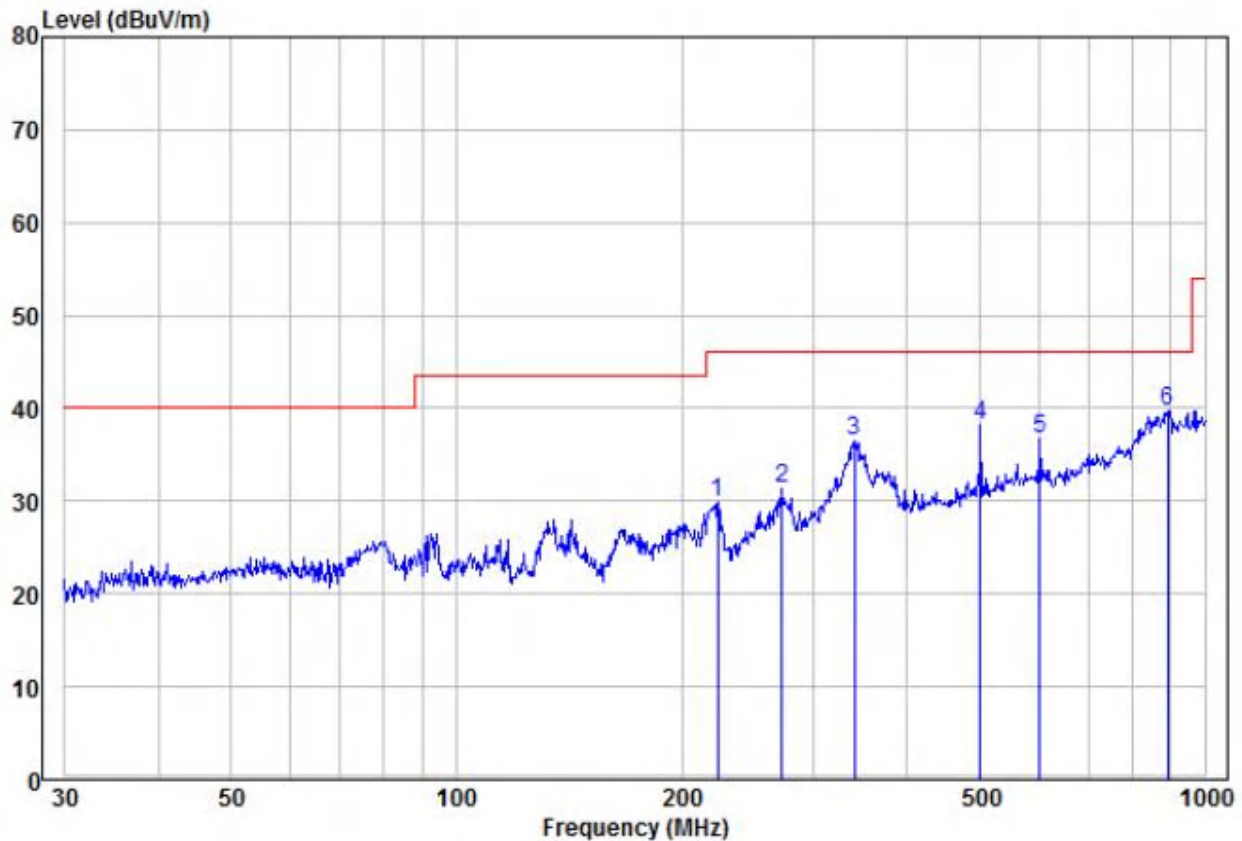
- a. 1) Below 1G: The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2) Above 1G: The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
Note: For the radiated emission test above 1GHz: Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

	d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case . i. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Only the worst case is recorded in the report.
Test Results:	Pass

5.9.1 Radiated emission below 1GHz

MSS-Z6320WR190-120C0-E

30MHz~1GHz		
Test mode:	Transmitting	Vertical



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase	APos	TPos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB			cm	deg
1	223.73	15.78	14.03	29.81	46.00	-16.19	Peak	VERTICAL	100	223
2	272.28	14.42	17.00	31.42	46.00	-14.58	Peak	VERTICAL	100	185
3	340.78	17.73	18.77	36.50	46.00	-9.50	Peak	VERTICAL	100	199
4	501.18	16.25	21.84	38.09	46.00	-7.91	Peak	VERTICAL	100	133
5	601.43	13.84	22.81	36.65	46.00	-9.35	Peak	VERTICAL	100	144
6 pp	890.73	9.95	29.67	39.62	46.00	-6.38	Peak	VERTICAL	100	201

Remark:

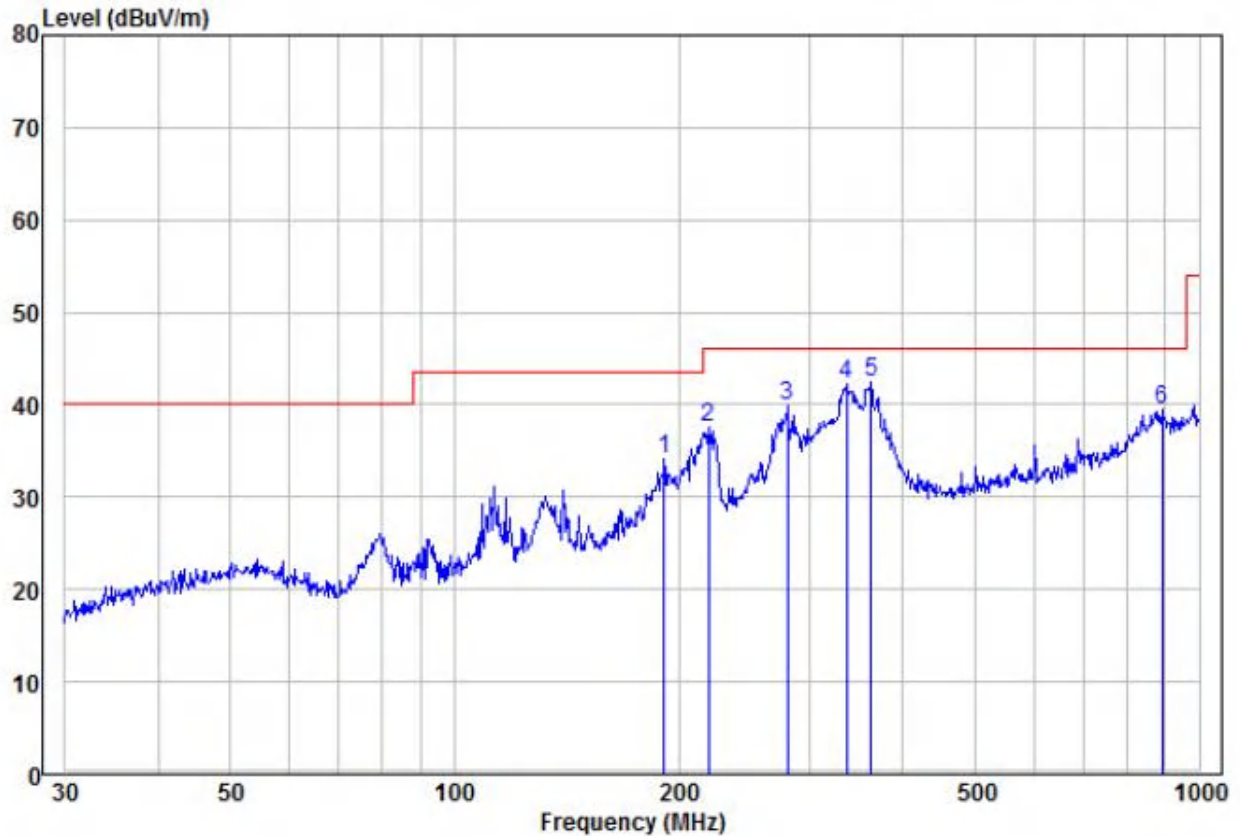
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

Test mode:	Transmitting	Horizontal
------------	--------------	------------



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase	APos	TPos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB			cm	deg
1	191.07	21.28	12.80	34.08	43.50	-9.42	Peak	HORIZONTAL	100	360
2	219.08	23.99	13.54	37.53	46.00	-8.47	Peak	HORIZONTAL	100	236
3	280.02	22.61	17.21	39.82	46.00	-6.18	Peak	HORIZONTAL	100	25
4	336.04	23.65	18.65	42.30	46.00	-3.70	Peak	HORIZONTAL	100	155
5 pp	362.98	23.25	19.30	42.55	46.00	-3.45	Peak	HORIZONTAL	100	250
6	890.73	9.87	29.67	39.54	46.00	-6.46	Peak	HORIZONTAL	100	96

Remark:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

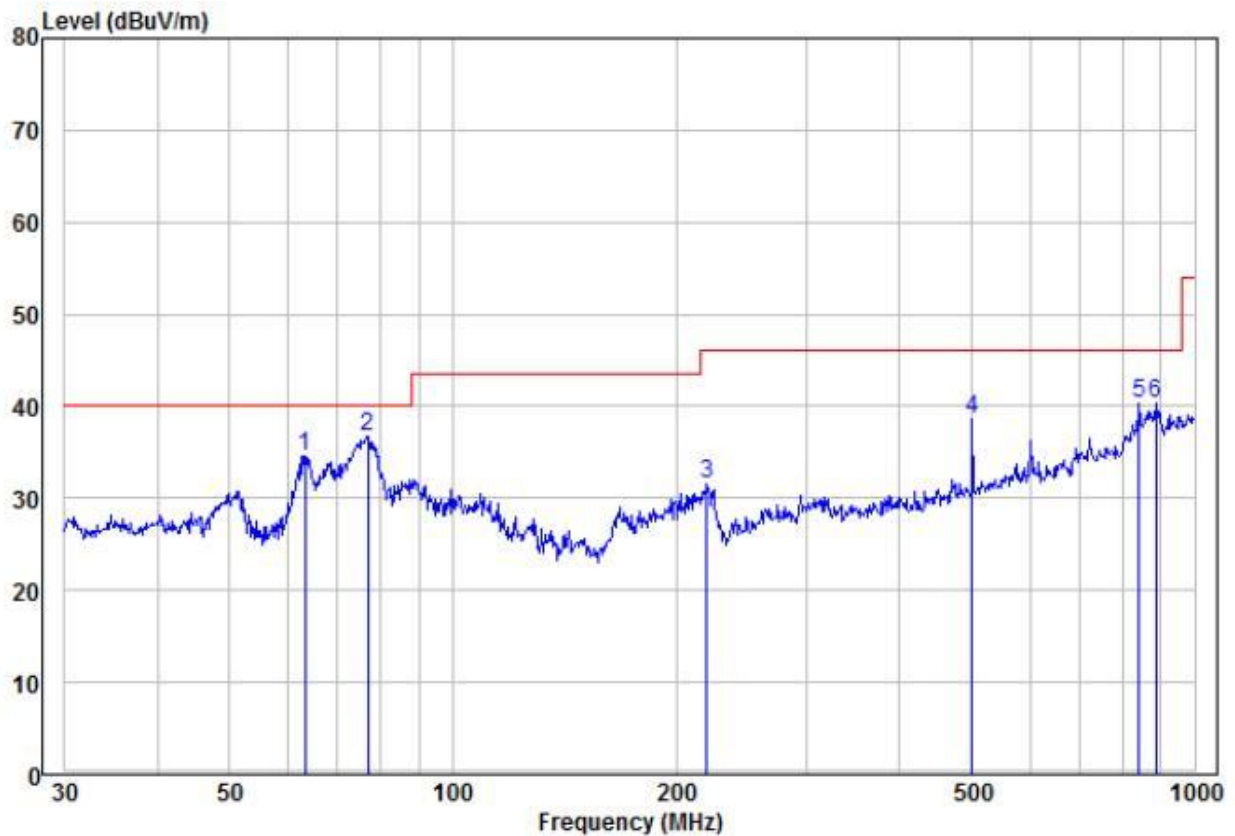
Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

GQ120-1900632-E1

30MHz~1GHz		
Test mode:	Transmitting	Vertical



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase	APos	TPos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB			cm	deg
1	63.31	22.65	11.90	34.55	40.00	-5.45	Peak	VERTICAL	100	80
2	76.78	27.72	8.98	36.70	40.00	-3.30	Peak	VERTICAL	100	260
3	219.84	18.00	13.56	31.56	46.00	-14.44	Peak	VERTICAL	100	230
4	501.18	16.73	21.84	38.57	46.00	-7.43	Peak	VERTICAL	100	188
5	842.13	11.29	28.94	40.23	46.00	-5.77	Peak	VERTICAL	100	120
6	887.61	10.79	29.62	40.41	46.00	-5.59	Peak	VERTICAL	100	278

Remark:

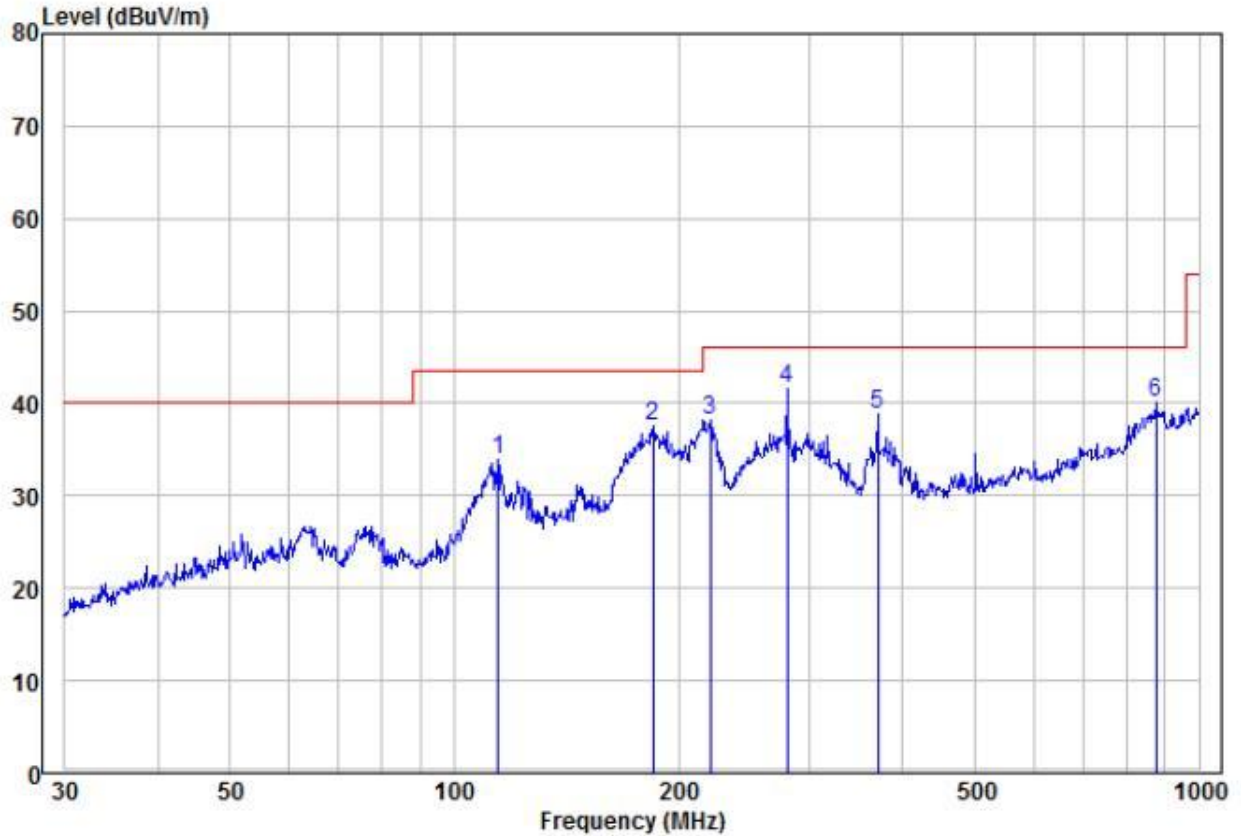
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

Test mode:	Transmitting	Horizontal
------------	--------------	------------



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase	APos	TPos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB			cm	deg
1	114.51	21.75	12.06	33.81	43.50	-9.69	Peak	HORIZONTAL	100	165
2	185.14	25.42	12.08	37.50	43.50	-6.00	Peak	HORIZONTAL	100	219
3	220.62	24.53	13.64	38.17	46.00	-7.83	Peak	HORIZONTAL	100	158
4 pp	280.02	24.31	17.21	41.52	46.00	-4.48	Peak	HORIZONTAL	100	241
5	370.70	19.49	19.34	38.83	46.00	-7.17	Peak	HORIZONTAL	100	57
6	875.25	10.67	29.43	40.10	46.00	-5.90	Peak	HORIZONTAL	100	122

Remark:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

5.9.2 Transmitter emission above 1GHz

Test mode:		802.11b(1Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	52.42	-4.26	48.16	74	-25.84	peak	H	1.5	90
4824.000	37.93	-4.26	33.67	54	-20.33	AVG	H	1.5	223
7236.000	50.64	1.18	51.82	74	-22.18	peak	H	1.5	40
7236.000	37.48	1.18	38.66	54	-15.34	AVG	H	1.5	268
4824.000	54.47	-4.26	50.21	74	-23.79	peak	V	1.5	295
4824.000	39.39	-4.26	35.13	54	-18.87	AVG	V	1.5	7
7236.000	51.57	1.18	52.75	74	-21.25	peak	V	1.5	125
7236.000	35.42	1.18	36.60	54	-17.40	AVG	V	1.5	21

Test mode:		802.11b(1Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	52.67	-4.12	48.55	74	-25.45	peak	H	1.5	194
4874.000	36.34	-4.12	32.22	54	-21.78	AVG	H	1.5	75
7311.000	49.27	1.46	50.73	74	-23.27	peak	H	1.5	126
7311.000	36.49	1.46	37.95	54	-16.05	AVG	H	1.5	283
4874.000	53.13	-4.12	49.01	74	-24.99	peak	V	1.5	359
4874.000	36.07	-4.12	31.95	54	-22.05	AVG	V	1.5	294
7311.000	49.11	1.46	50.57	74	-23.43	peak	V	1.5	357
7311.000	35.09	1.46	36.55	54	-17.45	AVG	V	1.5	225

Test mode:		802.11b(1Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol. H/V	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)			(m)	(Degree)
4924.000	51.46	-4.03	47.43	74	-26.57	peak	H	1.5	3
4924.000	37.54	-4.03	33.51	54	-20.49	AVG	H	1.5	210
7386.000	49.68	1.66	51.34	74	-22.66	peak	H	1.5	128
7386.000	37.04	1.66	38.70	54	-15.30	AVG	H	1.5	30
4924.000	54.05	-4.03	50.02	74	-23.98	peak	V	1.5	288
4924.000	38.46	-4.03	34.43	54	-19.57	AVG	V	1.5	224
7386.000	49.63	1.66	51.29	74	-22.71	peak	V	1.5	45
7386.000	37.21	1.66	38.87	54	-15.13	AVG	V	1.5	18

Remark:

- 1) The 1Mbps of rate of 802.11b is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11g(6Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	52.75	-4.26	48.49	74	-25.51	peak	H	1.5	203
4824.000	37.27	-4.26	33.01	54	-20.99	AVG	H	1.5	164
7236.000	50.73	1.18	51.91	74	-22.09	peak	H	1.5	188
7236.000	38.29	1.18	39.47	54	-14.53	AVG	H	1.5	339
4824.000	55.19	-4.26	50.93	74	-23.07	peak	V	1.5	146
4824.000	38.78	-4.26	34.52	54	-19.48	AVG	V	1.5	222
7236.000	50.89	1.18	52.07	74	-21.93	peak	V	1.5	199
7236.000	35.88	1.18	37.06	54	-16.94	AVG	V	1.5	158

Test mode:		802.11g(6Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	52.29	-4.12	48.17	74	-25.83	peak	H	1.5	66
4874.000	37.68	-4.12	33.56	54	-20.44	AVG	H	1.5	280
7311.000	50.18	1.46	51.64	74	-22.36	peak	H	1.5	173
7311.000	36.41	1.46	37.87	54	-16.13	AVG	H	1.5	68
4874.000	53.68	-4.12	49.56	74	-24.44	peak	V	1.5	310
4874.000	36.86	-4.12	32.74	54	-21.26	AVG	V	1.5	264
7311.000	48.38	1.46	49.84	74	-24.16	peak	V	1.5	110
7311.000	36.34	1.46	37.80	54	-16.20	AVG	V	1.5	14

Test mode:		802.11g(6Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4924.000	51.52	-4.03	47.49	74	-26.51	peak	H	1.5	259
4924.000	38.85	-4.03	34.82	54	-19.18	AVG	H	1.5	24
7386.000	50.82	1.66	52.48	74	-21.52	peak	H	1.5	280
7386.000	37.86	1.66	39.52	54	-14.48	AVG	H	1.5	113
4924.000	54.07	-4.03	50.04	74	-23.96	peak	V	1.5	221
4924.000	38.15	-4.03	34.12	54	-19.88	AVG	V	1.5	190
7386.000	50.27	1.66	51.93	74	-22.07	peak	V	1.5	182
7386.000	37.90	1.66	39.56	54	-14.44	AVG	V	1.5	196

Remark:

- 1) The 6Mbps of rate of 802.11g is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11n20(6.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	53.38	-4.26	49.12	74	-24.88	peak	H	1.5	347
4824.000	37.02	-4.26	32.76	54	-21.24	AVG	H	1.5	279
7236.000	50.67	1.18	51.85	74	-22.15	peak	H	1.5	133
7236.000	37.40	1.18	38.58	54	-15.42	AVG	H	1.5	318
4824.000	55.01	-4.26	50.75	74	-23.25	peak	V	1.5	11
4824.000	38.16	-4.26	33.90	54	-20.10	AVG	V	1.5	328
7236.000	50.77	1.18	51.95	74	-22.05	peak	V	1.5	4
7236.000	35.87	1.18	37.05	54	-16.95	AVG	V	1.5	322

Test mode:		802.11n20(6.5Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	51.68	-4.12	47.56	74	-26.44	peak	H	1.5	218
4874.000	36.77	-4.12	32.65	54	-21.35	AVG	H	1.5	89
7311.000	50.11	1.46	51.57	74	-22.43	peak	H	1.5	30
7311.000	35.63	1.46	37.09	54	-16.91	AVG	H	1.5	65
4874.000	52.77	-4.12	48.65	74	-25.35	peak	V	1.5	264
4874.000	37.78	-4.12	33.66	54	-20.34	AVG	V	1.5	316
7311.000	49.48	1.46	50.94	74	-23.06	peak	V	1.5	21
7311.000	36.22	1.46	37.68	54	-16.32	AVG	V	1.5	177

Test mode:		802.11n20(6.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4924.000	51.38	-4.03	47.35	74	-26.65	peak	H	1.5	147
4924.000	37.26	-4.03	33.23	54	-20.77	AVG	H	1.5	311
7386.000	50.30	1.66	51.96	74	-22.04	peak	H	1.5	163
7386.000	36.37	1.66	38.03	54	-15.97	AVG	H	1.5	123
4924.000	54.58	-4.03	50.55	74	-23.45	peak	V	1.5	232
4924.000	37.97	-4.03	33.94	54	-20.06	AVG	V	1.5	224
7386.000	50.81	1.66	52.47	74	-21.53	peak	V	1.5	262
7386.000	36.85	1.66	38.51	54	-15.49	AVG	V	1.5	185

Remark:

- 1) The MCS0 of rate of 802.11n20 is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
 Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11n40(13.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	53.45	-4.24	49.21	74	-24.79	peak	H	1.5	26
4824.000	36.10	-4.24	31.86	54	-22.14	AVG	H	1.5	156
7236.000	51.27	1.2	52.47	74	-21.53	peak	H	1.5	236
7236.000	37.81	1.2	39.01	54	-14.99	AVG	H	1.5	170
4824.000	54.33	-4.24	50.09	74	-23.91	peak	V	1.5	210
4824.000	39.94	-4.24	35.70	54	-18.30	AVG	V	1.5	144
7236.000	51.80	1.2	53.00	74	-21.00	peak	V	1.5	168
7236.000	36.16	1.2	37.36	54	-16.64	AVG	V	1.5	268

Test mode:		802.11n40(13.5Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	51.47	-4.12	47.35	74	-26.65	peak	H	1.5	42
4874.000	37.04	-4.12	32.92	54	-21.08	AVG	H	1.5	276
7311.000	50.07	1.46	51.53	74	-22.47	peak	H	1.5	329
7311.000	36.55	1.46	38.01	54	-15.99	AVG	H	1.5	11
4874.000	53.10	-4.12	48.98	74	-25.02	peak	V	1.5	335
4874.000	36.63	-4.12	32.51	54	-21.49	AVG	V	1.5	323
7311.000	50.19	1.46	51.65	74	-22.35	peak	V	1.5	37
7311.000	36.03	1.46	37.49	54	-16.51	AVG	V	1.5	143

Test mode:		802.11n40(13.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4924.000	54.20	-4.05	50.15	74	-23.85	peak	H	1.5	264
4924.000	36.01	-4.05	31.96	54	-22.04	AVG	H	1.5	148
7386.000	51.66	1.64	53.30	74	-20.70	peak	H	1.5	124
7386.000	38.47	1.64	40.11	54	-13.89	AVG	H	1.5	225
4924.000	54.80	-4.05	50.75	74	-23.25	peak	V	1.5	244
4924.000	39.45	-4.05	35.40	54	-18.60	AVG	V	1.5	100
7386.000	50.89	1.64	52.53	74	-21.47	peak	V	1.5	196
7386.000	36.02	1.64	37.66	54	-16.34	AVG	V	1.5	299

Remark:

- 1) The MCS0 of rate of 802.11n40 is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11ax20(8.6Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	52.68	-4.26	48.42	74	-25.58	peak	H	1.5	226
4824.000	37.98	-4.26	33.72	54	-20.28	AVG	H	1.5	97
7236.000	52.04	1.18	53.22	74	-20.78	peak	H	1.5	305
7236.000	38.66	1.18	39.84	54	-14.16	AVG	H	1.5	189
4824.000	55.35	-4.26	51.09	74	-22.91	peak	V	1.5	166
4824.000	39.66	-4.26	35.40	54	-18.60	AVG	V	1.5	90
7236.000	50.86	1.18	52.04	74	-21.96	peak	V	1.5	133
7236.000	36.51	1.18	37.69	54	-16.31	AVG	V	1.5	200

Test mode:		802.11ax20(8.6Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	52.66	-4.12	48.54	74	-25.46	peak	H	1.5	154
4874.000	37.97	-4.12	33.85	54	-20.15	AVG	H	1.5	124
7311.000	49.74	1.46	51.20	74	-22.80	peak	H	1.5	115
7311.000	35.74	1.46	37.20	54	-16.80	AVG	H	1.5	12
4874.000	53.78	-4.12	49.66	74	-24.34	peak	V	1.5	341
4874.000	37.53	-4.12	33.41	54	-20.59	AVG	V	1.5	126
7311.000	50.20	1.46	51.66	74	-22.34	peak	V	1.5	200
7311.000	35.03	1.46	36.49	54	-17.51	AVG	V	1.5	34

Test mode:		802.11ax20(8.6Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4924.000	52.46	-4.03	48.43	74	-25.57	peak	H	1.5	263
4924.000	38.18	-4.03	34.15	54	-19.85	AVG	H	1.5	210
7386.000	50.67	1.66	52.33	74	-21.67	peak	H	1.5	286
7386.000	36.79	1.66	38.45	54	-15.55	AVG	H	1.5	62
4924.000	53.25	-4.03	49.22	74	-24.78	peak	V	1.5	213
4924.000	38.67	-4.03	34.64	54	-19.36	AVG	V	1.5	316
7386.000	49.46	1.66	51.12	74	-22.88	peak	V	1.5	282
7386.000	37.96	1.66	39.62	54	-14.38	AVG	V	1.5	260

Remark:

- 1) The MCS0 of rate of 802.11n20 is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11ax40(17.2Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	54.07	-4.24	49.83	74	-24.17	peak	H	1.5	322
4824.000	37.11	-4.24	32.87	54	-21.13	AVG	H	1.5	25
7236.000	51.75	1.2	52.95	74	-21.05	peak	H	1.5	340
7236.000	38.43	1.2	39.63	54	-14.37	AVG	H	1.5	121
4824.000	55.38	-4.24	51.14	74	-22.86	peak	V	1.5	45
4824.000	39.76	-4.24	35.52	54	-18.48	AVG	V	1.5	40
7236.000	50.25	1.2	51.45	74	-22.55	peak	V	1.5	105
7236.000	35.31	1.2	36.51	54	-17.49	AVG	V	1.5	50

Test mode:		802.11ax40(17.2Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	51.90	-4.12	47.78	74	-26.22	peak	H	1.5	157
4874.000	37.13	-4.12	33.01	54	-20.99	AVG	H	1.5	298
7311.000	48.70	1.46	50.16	74	-23.84	peak	H	1.5	232
7311.000	35.36	1.46	36.82	54	-17.18	AVG	H	1.5	16
4874.000	52.79	-4.12	48.67	74	-25.33	peak	V	1.5	298
4874.000	36.23	-4.12	32.11	54	-21.89	AVG	V	1.5	108
7311.000	49.27	1.46	50.73	74	-23.27	peak	V	1.5	301
7311.000	36.54	1.46	38.00	54	-16.00	AVG	V	1.5	218

Test mode:		802.11ax40(17.2Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4924.000	53.58	-4.05	49.53	74	-24.47	peak	H	1.5	43
4924.000	36.45	-4.05	32.40	54	-21.60	AVG	H	1.5	115
7386.000	51.50	1.64	53.14	74	-20.86	peak	H	1.5	3
7386.000	37.46	1.64	39.10	54	-14.90	AVG	H	1.5	95
4924.000	55.41	-4.05	51.36	74	-22.64	peak	V	1.5	186
4924.000	39.41	-4.05	35.36	54	-18.64	AVG	V	1.5	359
7386.000	51.89	1.64	53.53	74	-20.47	peak	V	1.5	116
7386.000	36.76	1.64	38.40	54	-15.60	AVG	V	1.5	98

Remark:

- 1) The MCS0 of rate of 802.11n40 is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

5.10 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205		
Test Method:	ANSI C63.10 2020		
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m @3m)	Remark
	30MHz-88MHz	40.0	Quasi-peak Value
	88MHz-216MHz	43.5	Quasi-peak Value
	216MHz-960MHz	46.0	Quasi-peak Value
	960MHz-1GHz	54.0	Quasi-peak Value
	Above 1GHz	54.0	Average Value
		74.0	Peak Value
Test Setup:			

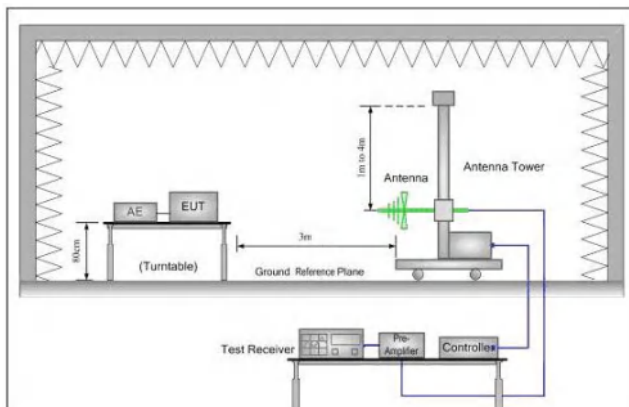


Figure 1. 30MHz to 1GHz

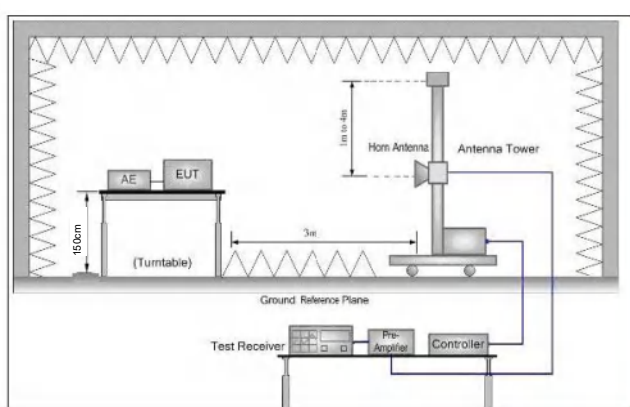


Figure 2. Above 1 GHz

Test Procedure:

- 1) Below 1G: The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
 - 2) Above 1G: The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- Note: For the radiated emission test above 1GHz:
- Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
 - The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
 - For each suspected emission, the EUT was arranged to its worst case and

	then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case . i. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates. Transmitting mode.
Final Test Mode:	Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case. Only the worst case is recorded in the report.
Test Results:	Pass

Test data:

Worse case mode:		802.11b(1Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2390.000	58.73	-9.2	49.53	74	-24.47	peak	H	1.5	203
2390.000	44.31	-9.2	35.11	54	-18.89	AVG	H	1.5	238
2400.000	59.86	-9.39	50.47	74	-23.53	peak	H	1.5	312
2400.000	46.20	-9.39	36.81	54	-17.19	AVG	H	1.5	156
2390.000	58.77	-9.2	49.57	74	-24.43	peak	V	1.5	172
2390.000	44.87	-9.2	35.67	54	-18.33	AVG	V	1.5	117
2400.000	59.29	-9.39	49.90	74	-24.10	peak	V	1.5	164
2400.000	46.29	-9.39	36.90	54	-17.10	AVG	V	1.5	147

Worse case mode:		802.11b(1Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2483.500	58.33	-9.29	49.04	74	-24.96	peak	H	1.5	63
2483.500	43.77	-9.29	34.48	54	-19.52	AVG	H	1.5	86
2483.500	58.26	-9.29	48.97	74	-25.03	peak	V	1.5	315
2483.500	45.77	-9.29	36.48	54	-17.52	AVG	V	1.5	134

Worse case mode:		802.11g(6Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2390.000	59.07	-9.2	49.87	74	-24.13	peak	H	1.5	304
2390.000	44.77	-9.2	35.57	54	-18.43	AVG	H	1.5	151
2400.000	59.87	-9.39	50.48	74	-23.52	peak	H	1.5	15
2400.000	46.29	-9.39	36.90	54	-17.10	AVG	H	1.5	329
2390.000	58.94	-9.2	49.74	74	-24.26	peak	V	1.5	162
2390.000	44.59	-9.2	35.39	54	-18.61	AVG	V	1.5	222
2400.000	59.35	-9.39	49.96	74	-24.04	peak	V	1.5	325
2400.000	46.67	-9.39	37.28	54	-16.72	AVG	V	1.5	41

Worse case mode:		802.11g(6Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2483.500	58.18	-9.29	48.89	74	-25.11	peak	H	1.5	131
2483.500	44.16	-9.29	34.87	54	-19.13	AVG	H	1.5	71
2483.500	58.38	-9.29	49.09	74	-24.91	peak	V	1.5	233
2483.500	46.37	-9.29	37.08	54	-16.92	AVG	V	1.5	252

Worse case mode:		802.11n(HT20)(6.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	59.23	-9.2	50.03	74	-23.97	peak	H	1.5	65
2390.000	44.03	-9.2	34.83	54	-19.17	AVG	H	1.5	162
2400.000	59.44	-9.39	50.05	74	-23.95	peak	H	1.5	208
2400.000	46.12	-9.39	36.73	54	-17.27	AVG	H	1.5	42
2390.000	58.93	-9.2	49.73	74	-24.27	peak	V	1.5	260
2390.000	44.92	-9.2	35.72	54	-18.28	AVG	V	1.5	236
2400.000	60.03	-9.39	50.64	74	-23.36	peak	V	1.5	359
2400.000	46.20	-9.39	36.81	54	-17.19	AVG	V	1.5	109

Worse case mode:		802.11n(HT20)(6.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	58.08	-9.29	48.79	74	-25.21	peak	H	1.5	224
2483.500	44.14	-9.29	34.85	54	-19.15	AVG	H	1.5	45
2483.500	58.26	-9.29	48.97	74	-25.03	peak	V	1.5	57
2483.500	45.58	-9.29	36.29	54	-17.71	AVG	V	1.5	311

Worse case mode:		802.11n(HT40)(13.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	58.34	-9.2	49.14	74	-24.86	peak	H	1.5	96
2390.000	44.19	-9.2	34.99	54	-19.01	AVG	H	1.5	127
2400.000	59.44	-9.39	50.05	74	-23.95	peak	H	1.5	134
2400.000	46.31	-9.39	36.92	54	-17.08	AVG	H	1.5	163
2390.000	58.31	-9.2	49.11	74	-24.89	peak	V	1.5	115
2390.000	44.77	-9.2	35.57	54	-18.43	AVG	V	1.5	65
2400.000	59.39	-9.39	50.00	74	-24.00	peak	V	1.5	234
2400.000	46.29	-9.39	36.90	54	-17.10	AVG	V	1.5	353

Worse case mode:		802.11n(HT40)(13.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	57.83	-9.29	48.54	74	-25.46	peak	H	1.5	147
2483.500	43.90	-9.29	34.61	54	-19.39	AVG	H	1.5	100
2483.500	57.44	-9.29	48.15	74	-25.85	peak	V	1.5	203
2483.500	46.39	-9.29	37.10	54	-16.90	AVG	V	1.5	341

Worse case mode:		802.11ax(HE20)(8.6Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	58.30	-9.2	49.10	74	-24.90	peak	H	1.5	41
2390.000	44.38	-9.2	35.18	54	-18.82	AVG	H	1.5	170
2400.000	60.24	-9.39	50.85	74	-23.15	peak	H	1.5	224
2400.000	46.35	-9.39	36.96	54	-17.04	AVG	H	1.5	232
2390.000	58.31	-9.2	49.11	74	-24.89	peak	V	1.5	275
2390.000	44.76	-9.2	35.56	54	-18.44	AVG	V	1.5	273
2400.000	59.75	-9.39	50.36	74	-23.64	peak	V	1.5	60
2400.000	46.73	-9.39	37.34	54	-16.66	AVG	V	1.5	116

Worse case mode:		802.11a(HE20)(8.6Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	57.96	-9.29	48.67	74	-25.33	peak	H	1.5	176
2483.500	44.30	-9.29	35.01	54	-18.99	AVG	H	1.5	120
2483.500	58.19	-9.29	48.90	74	-25.10	peak	V	1.5	129
2483.500	45.53	-9.29	36.24	54	-17.76	AVG	V	1.5	144

Worse case mode:		802.11ax(HE40)(17.2Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	58.95	-9.2	49.75	74	-24.25	peak	H	1.5	342
2390.000	44.43	-9.2	35.23	54	-18.77	AVG	H	1.5	184
2400.000	59.72	-9.39	50.33	74	-23.67	peak	H	1.5	150
2400.000	46.00	-9.39	36.61	54	-17.39	AVG	H	1.5	284
2390.000	58.98	-9.2	49.78	74	-24.22	peak	V	1.5	160
2390.000	44.78	-9.2	35.58	54	-18.42	AVG	V	1.5	31
2400.000	60.10	-9.39	50.71	74	-23.29	peak	V	1.5	141
2400.000	46.02	-9.39	36.63	54	-17.37	AVG	V	1.5	287

Worse case mode:		802.11ax(HE40)(17.2Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	57.86	-9.29	48.57	74	-25.43	peak	H	1.5	179
2483.500	43.72	-9.29	34.43	54	-19.57	AVG	H	1.5	202
2483.500	57.74	-9.29	48.45	74	-25.55	peak	V	1.5	184
2483.500	45.66	-9.29	36.37	54	-17.63	AVG	V	1.5	71

Note:

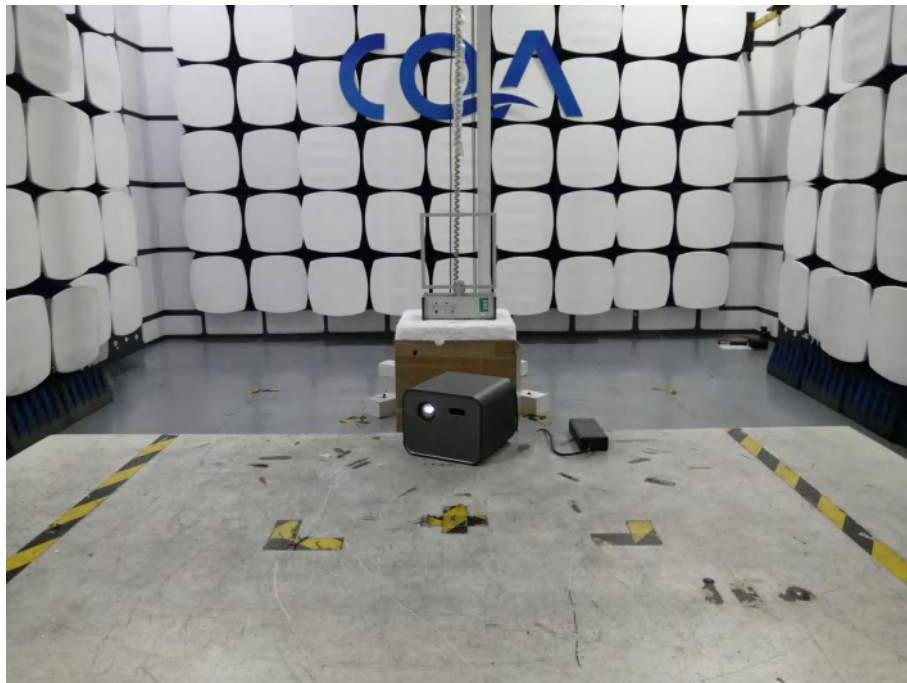
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

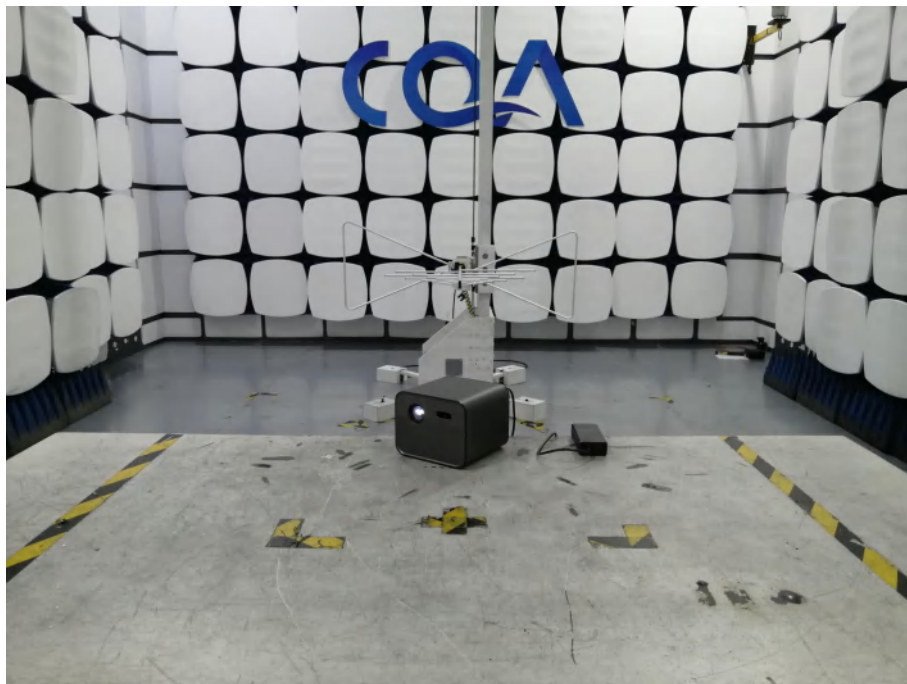
6 Photographs - EUT Test Setup

6.1 Radiated Spurious Emission

9kHz~30MHz:



30MHz~1GHz:



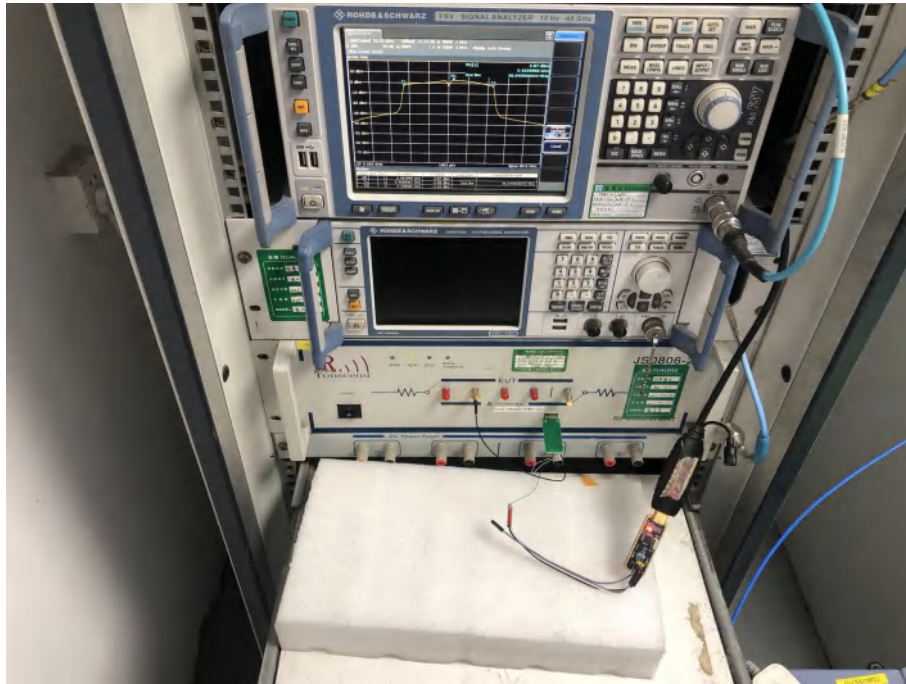
Above 1GHz:



6.2 Conducted Emission



6.3 RF Conducted measurement



7 Photographs - EUT Constructional Details

Refer to PHOTOGRAPHS OF EUT for CQASZ20250601276E-01.

*** END OF REPORT ***